

Applications



MEMBER'S HANDBOOK
1986 - 1987



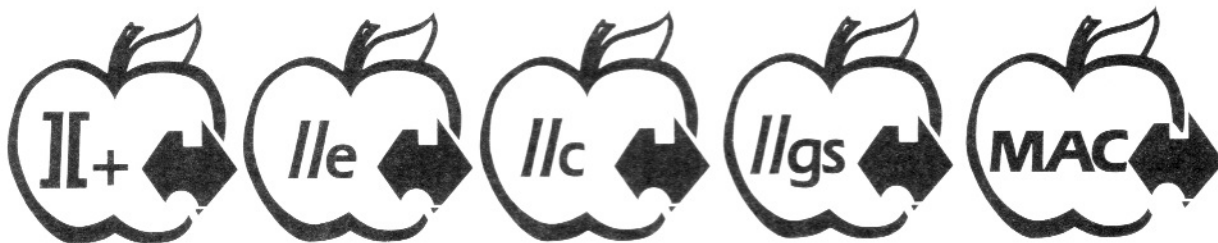
THE PUBLICATION OF THE
APPLE USERS GROUP (SYDNEY)
(Incorporated in N.S.W.)

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T•SHIRT

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(SYDNEY)



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MEMBERS - INDEX - HANDBOOK

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The Rules of the AUG (Sydney) Inc.

Index of "Applecations" - 1986.

----- Software Library Listing -----

DOSSection 1 CP/M.....Section 3
Pascal.....Section 2 Macintosh.....Section 4

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**** NO MEETINGS IN JANUARY 1987 **** NEW VENUE - SYDNEY UNIVERSITY ****

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BULLETIN BOARD : 498-7084, 24 Hours Access. Password available from SYSOPS
NEW NUMBER : 300 Baud, CCITT, 8 Bit, 1 Stop Bit, No Parity.

ENQUIRIES : Membership : No magazine = Graham Clarke
: Bulk Purch. & delays = Chris Wanigesekera

N.B. As the AUG has no offices, please phone only between 6 and 9 P.M.

AUG DISK #1+2+3+4

SIDE ONE (+) NOTES:

- 1+: AIRFOIL will generate a hi-res plot of a chosen NACA wing profile.
- 2+: BIORHYTHM gives a printed record of your intellectual, physical and emotional state. Needs an 80 column printer.
- 3+: CALCULATOR START is the intro to an integer talking calculator. The spoken numbers are very clear, making it an excellent first maths teacher. Uses NUMBERS, TALK and CALC1.
- 4+: CHASER is a lo-res graphics game in which one chases a square around the screen, capturing it by pressing the button when it is in the "cross-hairs". Each success halves the size of the square. Joystick required for best results.
- 5+: CONTROL DISPLAY START runs CONTROL-A\$3B0-L\$1E, which shows all control characters in inverse video.
- 6+: ENGINE is a hi-res demo of the operation of a four-stroke internal combustion engine.
- 7+: HEX/DECIMAL CONVERTER is what it says. Conversions can be hex to dec or dec to hex. The negative equivalents of decimals are given.
- 8+: HGR DEMO is a series of seven hi-res displays from Roger Keating.
- 9+: INFINITE MONKEYS is a description of an attempt to persuade monkeys to write one of the world's great books.
- 10+: LIS'NER PROGRAM requires a cassette recorder and a microphone to operate.
- 11+: PROBABILITY MACHINE is a lo-res demo of Pascal's theory of probability.
- 12+: ROGER'S APPLE is a lo-res Apple logo.
- 13+: SHOOTOUT is a lo-res game for two players, using paddles.
- 14+: TABLES is a lo-res test of multiplication tables, offering various response times and choices. Do not try and key in the answers.
- 15+: TARGET SHOOT is a clever text game using the "Z" and "/" keys as deflectors for a moving ***. The object is to remove all the ***s with as few deflectors as possible.
- 16+: U BOAT is a fairly slow game where one uses paddle 0 to sink enemy submarines, before they get you with mines.
- 17+: USS ENTERPRISE is a hi-res generation of Captain Kirk's space ship.

SIDE TWO (-) NOTES:

- 1-: APPLE ORGAN is an educational and entertaining look at Apple sounds. It suggests a means of using external amplifiers via the games port. The September, 1977 issue of Byte magazine would help.
- 2-: APPLE VISION is a dynamic audio-visual hi-res display from Bob Bishop.
- 3-: PATCHES START uses PATCHES to introduce a few utilities for programmers. "Edit" allows control of cursor position and insertion. "DOS disable" allows you to turn DOS on or off. "Input correction" allows for correction of input statements. "Onerr patch" allows an infinite number of "Onerr"s to occur.
- 4-: ELIZA is a conversational program for bored programmers. It seems to have a one-track mind, and can get impatient. Uses ELDATA and ELWORDS.
- 5-: ADVANCED SHAPE BUILDER is an incomplete, but potentially useful, utility to generate hi-res shapes. Requires a tape recorder for saving shapes. Uses HIRRES.
- 6-: BLACK BOX is a hi-res game where one has to deduce the location of four atoms hidden in a box. Uses BLACK BOX.
- 7-: L GAME is a strategy game for two players, moving "L" pieces around a lo-res playing board. Paddles are used.
- 8-: QUEST is a text adventure game, using N, S, E, W, U and D keys to manoeuvre. Patience is a virtue they say.
- 9-: IQ TEST is what it says, but answers are not forthcoming.
- 10-: LIFE #2001 is a version of the game of Life.
- 11-: ROUTINES is the intro to five routines, which appear to be for DOS 3.2 only:
 - 1) B/STAT gives the length, start address and "call" of a binary file. It also gives "save" instructions.
 - 2) FREE SPACE shows the amount of disk space available.
 - 3) SINGLE DRIVE COPY works for one or two drives.
 - 4) DISK MAP maps the used and free disk sectors.
 - 5) FIX CATALOG corrects program length errors on the disk catalog.
- 12-: WORD PUZZLE generates a square matrix of letters, hiding your selected word. A printer is required for useful output.

AUG DISK #5+6+7+8

SIDE ONE (+) NOTES:

- 1+: MENU is a test file reader, which uses CAT to display comments about the programs on the disk. It will run your chosen program.
- 2+: BINARY/DECIMAL CONVERTS/7BITS will convert a 7 bit binary number to decimal and will also display the ASCII character represented on the Apple. DECIMAL/BINARY 7BITS CONVERTS does the reverse computation.
- 3+: CIRCLE DRAWER will draw a circle on the hi-res screen. Note that the screen is 279 x 191 dots, thus the screen centre is at 139, 95. The maximum full circle radius is 95.
- 4+: CIRCULAR ART will continually draw circular forms on the screen, changing colours.
- 5+: CLOCK is a hi-res representation of a grandfather clock, complete with tick-tocks, chimes and alarms.
- 6+: CODES AND HANGMAN comprises two games, the first being "Cryptic Code", in which one has to decode a phrase entered at the keyboard, or supplied by the computer. "Hangman" requires one to guess a word before being "hung". Uses a lo-res display.
- 7+: DECISIONS is a computersied aid to the difficult problem of making decisions, when there are two alternate solutions.
- 8+: DISK AIDE is a very useful package for examining and editing DOS 3.3 disk sectors. Run DISKAIDE to start. DISK AIDE [DOCUMENTATION] has detailed instructions. DISK AIDE [APPLE CORE] and DISK AIDE [MACHINE] are the working programs.
- 9+: HEADING is an intro to the programs contributed by George Tahmindjis to this disk.
- 10+: HELLO APPLE is a friendly greeting and problem solving program, with musical and graphic accompaniment.
- 11+: IMPOSSIBLE DREAM is a hi-res display of a 3-D figure which is impossible to create in reality.
- 12+: STAR LANES* is a game of interstellar trading for 2 or more players. The object is to amass the most money by buying and selling shares. The rules are contained in INSTRUCTIONS FOR STAR LANES*, which is run from the main program.
- 13+: LISTER prints out the Applesoft command codes and addresses to the screen or printer.
- 14+: OREGON TRAIL is an interesting adventure game with a difference. The object is to transport your family to Oregon, with minimum losses. Paddle 0 is used to shoot and hunt.
- 15+: SPEED READING TRAINER is an aid to speeding up your reading. The object is to correctly re-type words flashed onto the screen.
- 16+: TYPE TEACHER is intended to aid your typing. Unfortunately, it is very time dependant, and reports errors when your type correctly, but at a different speed to the computer.

SIDE TWO (-) NOTES:

- 1-: INTEGER LANGUAGES allows most versions of Apple][+ to run integer programs.
- 2-: APPLE][+ MINI/ASM provides the mini-assembler facilities to Autostart ROM users who don't have a language card. It also includes conversion routines between decimal and hex numbers, together with the step and trace features. Uses SUPPLEMENT.
- 3-: APPLESOFT SHAPE MAKER is a routine for generating hi-res shapes. It starts with a demo of its capabilities. Instructions are given in the program.
- 4-: CARWASH is a paddle/lo-res game where one has to keep one's car free of bird mess, whilst stuck in traffic.
- 5-: DISK HELPER is a disk file utility offering the following:
 - L - Lock every file.
 - U - Unlock every file.
 - D - Delete unlocked file.
 - R - Restore deleted file.
 - F - Fix sector lengths.
 - C - Catalog disk.
 - Q - Quit.
 - O - File lengths in order.
 - M - Modify sector lengths.
 - S - Set a specific file to a specific sector length.

Note that the "Fix sector length" option requires a non-existing DISK ROUTINES program to fix text files, though option "S" can perform this function.
- 6-: DISK SPEED TEST is a utility to test the speed of your disk drives. Run DISK SPEED TEST INFO first. Uses DSPEED.OBJ.
NOTE: Use a blank disk for test purposes.
- 7-: EQUATION OF A LINE is an excellent teaching aid for straight line graphs. The number of questions is selectable, and can be in four forms. After deriving your own answers, a <CR> will display the correct result.
- 8-: DISK SORT will re-arrange a disk catalog into alphabetical order. One may also sort them into types; Integer; Applesoft; Binary and

- Text. A third option is to sort by file lengths. Works on DOS 3.3 disks, and uses RWTS.
- 9-: MASTERMIND is a good version of this popular game, using numbers in place of the original colours. Four or five holes are used, together with six or seven numbers. Uses MASTERMIND CORE (A\$1C00/L\$11C).
- 10-: NUMBER THEORY has a number of routines relating to:
- Integer numbers
 - Prime numbers
 - Perfect numbers
 - Highest common factors
 - Prime factors
 - Prime tests
 - 3 digit cubes
 - Lowest common multiples
 - IQ test (a mixture of words and numbers.)
- 11-: SPELUNKING Micro, Oct, 1979 is required to understand how to work this adventure game.
- 12-: TAXMAN is a maths teaching game. You take a number from a list and the taxman takes all the factors of that number that are left in the list. Numbers left without factors go to the taxman. The winner has the highest score.
- 13-: TUBS or "The Ultimate B-Stat" is a utility to display details of any disk file. It will list the file name and type, track/sector start, sector count, start address and length, and disk volume number. It allows changes to the start address of a binary file, and copies the file if required.
- 14-: YAHTZEE is a dice rolling game for 2 or more players, using 5 dice. One of the players may be the Apple. There are 13 scoring categories, and the winner has the highest score when all categories are full.

AUG DISK #9+10+11

SIDE ONE (+) NOTES:

- 1+: LANG is used to load INTEGER LANGUAGE, which is required for some programs on this disk (NOT for users with language cards).
- 2+: GAMES MENU is the intro to the following games programs:
- ALIVATOR
 - LUNAR-LANDER
 - DEATH STAR
 - HI-RES DRAGON MAZE
 - AIR FORCE BOMBER
 - AIR ATTACK!
 - SUBMARINE
 - SPACE-WAR V
 - CARRYING-BALLOON
 - NEW FLY KILLER
- 3+: ALIVADER is a hi-res invader type of game using paddle 0 to control your defences against alien attack. The object is to prevent his bombs landing, and to shoot down as many alien ships as possible in the allocated time. NOTE that this has to be "BRUN".
- 4+: LUNAR-LANDER is a hi-res version of this popular game. Paddles can be used, but a joystick is better.
- 5+: DEATH STAR is a very difficult hi-res game, in which one used paddles (joysticks are better) to control beam distance and azimuth, in order to destroy meteorites before they break down one's defences.
- 6+: HI-RES DRAGON MAZE is a hi-res game where one navigates through an invisible maze to reach the exit. Parts of the maze appear as you strike obstructions. You are chased by an alien. A knowledge of Japanese would help! Keyboard only. NOTE This game may not run after using other games on this disk.
- 7+: AIR FORCE BOMBER is another hi-res game, using paddle 0 to control a bomber, with PBO to time the bomb drops. Constantly changing height adds to the skill requirement.
- 8+: AIR ATTACK! is a hi-res paddle game where one controls the height of a bomber and attacks the enemy base.
- 9+: SUBMARINE is a hi-res game where one has to depth-charge the enemy submarines, before they sink your ship using mines. Very hard to survive. Uses paddle 0.
- 10+: SPACE-WAR V is a hi-res game where one has to blast holes in a wall in order to hit the enemy, who is shooting back. Uses paddle 0.
- 11+: CARRYING-BALLOON is a joystick operated hi-res game where one has to guide a balloon-carrying man past a series of obstacles to reach the goal.
- 12+: NEW FLY KILLER is a hi-res game where one has to kill flies, using an insecticide spray. Requires a joystick for best results.
- 13+: SINGLE KEY MENU is a utility to simplify the running of programs. It allows one to lock, unlock and delete selected files. It

- does not, however, cope with more than the last 24 programs in the catalog.
- 14+: TEXT FILE READER will output the contents of a disk text file to the screen or to a printer connected to slot 1.
- 15+: BARN is an interesting hi-res perspective view of a barn. Normal, wide angle and telephoto views are chosen. Paddles 0 & 1 control the picture size and viewing height respectively. The barn is rotated about 45 degrees every 18 seconds.
- 16+: CAR ANIMATION is a graphics game where one has to keep the car on the road, using paddle 0 to steer and paddle 1 to set the speed.
- 17+: CHECK BOOK BALANCER is a simple program to keep control of your money. It output to the screen or the printer (in slot 1).
- 18+: EQUIPROBABLE plots 1000 random integers ranged between 1 and 100, to show the equiprobable distribution. Uses a hi-res bar display.
- 19+: HIGHER HIGH-RES is a demo of how to increase hi-res resolution to 560 x 192 dots.
- 20+: LINE LIST is a handy utility to list Applesoft programs in 20 line blocks. Pressing any key will list the next 20 lines, except that pressing <ESC> will list only one more line. Uses L.L.OBJ..
- 21+: POLAR GRAPHICS gives a good hi-res demo of six types of polar functions.
- 22+: RADIOACTIVE is a convincing hi-res demo of the "half-life" concept of radio-active decay. Uses RADIO.
- 23+: SURFACE plots a three-dimensional surface in hi-res. Options are "exponential" and "decaying cosine" curves.
- 24+: MENU WRITER is a program to generate disk menus. A text file called CAT is created in the process.
- 25+: ORGAN RUN uses ORGAN.OBJ to make your keyboard musical. It also shows control characters in inverse video.
- 26+: ROGER'S APPLE is a lo-res Apple logo.
- 27+: UPDATE RUN purports to make DOS 3.2 disks bootable under either DOS 3.2 or DOS 3.3. Uses SANDY'S UPDATE. Don't use an original disk. I had problems with this program.
- 28+: UNIV UPDATE is a binary version of program 27+. It has the same comments and problems.

SIDE TWO (-) NOTES:

- 1-: ASSM/MON TUTORIAL is an excellent intro into the use of the mini-assembler. It guides one through the process of assembling a program to make sounds controlled by the paddles.
- 2-: BASIC TUTOR RUN is the intro to a novel tutorial on Applesoft BASIC programming. One can optionally use a hi-res character fonts, or normal text characters. Uses BASIC.OBJ and BASIC TUTOR CODE.
- 3-: WORDBASE RUN is the startup program for WORDBASE, which is a simple word processor, adequate for infrequent home use. File COMMENTS/WORDBASE describes the program. Uses FILTER, which can be used independently via FILTER RUN. PRIN1 is also used for the printout. PRIN2 is referred to in the program, but is not on the disk, and presumably only relates to an IBM printer.
- 4-: DEMUFFIN RUN bruns DEMUFFIN16ONLY, which does the opposite to MUFFIN, ie: it converts 16 sector files to 13 sector. DEMUFFIN appears to be the same program.
- 5-: FID RUN bruns FID, which is the standard DOS 3.3 version "M".
- 6-: RELOCATE briefly refers to RELOCATE.OBJ(\$800) and RELOCATE.S(LISA 1.5). The latter program is the source code, in Lisa 1.5 format. The program will relocate a machine language program to a new, non-overlapping, area of memory. See Applications, Vol. 3, No. 2 for more details.
- 7-: CATALOG MANAGEMENT is a utility to give notes on each program in a disk catalog. A text file called PROG.LIST is created first, using CATALOG MANAGEMENT-EDIT.
- 8-: BLACKJACK is a hi-res card game. The logic is not always perfect.

AUG DISK #12+13

SIDE ONE (+) NOTES:

- 1+: ADDRESS2 will add or subtract any combination of integer decimal, hex or binary numbers, giving the answer in all three forms. Number limits are ± 32767 .
- 2+: ASTRONOMY-EXPOSURES is an aid to the determination of photographic exposure values for celestial objects.
- 3+: FIND AND DFIND INSTRUCTIONS describes two machine language utilities:
FIND displays the addresses of "BB" between "CCCC" and "DDDD".
DFIND displays the addresses of "AABB" between "CCCC" and "DDDD".

Unfortunately, I could not get either to work. You may have better luck.

- 4+: GRANDAPPLE is the same as "CLOCK" on disk #5+6+7+8. It is a hi-res representation of a grandfather clock, complete with tick-tocks, chimes and alarms.
- 5+: GREAT CIRCLE calculates great circle bearings in miles and kilometres. It appears to have been designed for radio hams.
- 6+: HIGHER HI-RES is a demo of how to increase hi-res resolution to 560 x 192 dots.
- 7+: HIRES TV PATTERN GENERATOR will generate dot, crosshatch and crosshair patterns for TV testing.
- 8+: MEMORY INTERPRETER is a nice little utility for displaying the decimal, hex and ASCII values of memory locations.
- 9+: MENU WRITER is a program to generate disk menus. A text file called "CAT" is created in the process.
- 10+: POKES provides a means of converting a machine language routine in memory, to a series of pokes, added to your Applesoft program.
- 11+: RAM TEST 48K continually tests 48k of RAM, and identifies faulty RAM chips.
- 12+: ROGER'S APPLE is a lo-res Apple logo.
- 13+: SOFT EGG TIMER provides a lo-res digital count down timer, to ensure that your eggs are just right. Beeps at each minute.
- 14+: SHOOTING ALIEN bruns SHOOTING ALIEN.OBJ. This is a difficult hi-res graphics game, using paddie 0, where one has to shoot down aliens before they clobber you.

SIDE TWO (-) NOTES:

- 1-: ALIEN HEART is a hi-res graphics demo.
- 2-: CASH FORMAT INSTRUCTIONS describes CASH FORMAT, which is a file to be exec'd onto an Applesoft program so as to print cash amount neatly, with negative values in inverse video.
- 3-: CHARACTERS displays, in hex tabular form, all the characters available on an Apple.
- 4-: COLLISIONS provides an interesting hi-res display.
- 5-: CONTROL FINDER(1) is a routine to display control codes as flashing characters.
- 6-: DA BIN ICH ... is a hi-res picture display with a difference. Uses N.BIN.
- 7-: DOS3.3LC is used to transfer DOS into the language card. The HELLO program must be used to initiate the process. HULLO must also be on the disk, and is an alternative to the normal MENU, but does not like the change from DOS volume number to AUG disk ID. LANGUAGE CARD gives some details.
- 8-: FFT+ generates fast Fourier transformations. The sample program is a 64 point sine function.
- 9-: GABY is a hi-res graphics demo of random, rectangular, coloured blocks.
- 10-: HEXEC is a decimal to hex converter. The file must be exec'd to produce a one-line Applesoft program (line 13). It may be added to any existing program, of course.
- 11-: KRISTALLE is another interesting hi-res demo program.
- 12-: LACE is yet another interesting hi-res demo program, forming pretty lace patterns on the screen.
- 13-: LIFE(AS) is a hi-res display of the life process. It uses LIFE.OBJ(AS).
- 14-: NEON is a flashing neon display, in hi-res.
- 15-: ONE LINE is a one line program, generating a dynamic hi-res display.
- 16-: ORNATO2, QQQQQ, QUARRY, RANSOM, SHAKALIN, STAR and VASARELY are more hi-res demo programs.
- 17-: TOKEN LISTER lists the decimal codes for Applesoft tokens.
- 18-: TT is a good general purpose text reader.
- 19-: UPPER/LOWER CASE SHIFT appears to be a routine to add to TT to differentiate between upper and lower case on Apples without a lower case chip.

AUG DISK #14

SIDE ONE (+) NOTES:

- 1+: APPLEFESTERING SORES relates to problems with the Applesoft 1982 disk.
- 2+: CHESS BOARD solves the ancient problem of the grains of wheat which bankrupted the donor.
- 3+: CONVERT 3.2 -> 3.3 is a one-drive muffin program, to convert DOS 3.2 disks to DOS 3.3.
- 4+: CRITICAL PATH ANALYSIS is a simple program to analyse for critical paths. Up to 100 nodes can be entered.

5+: DIFFERENTIAL EQN SOLVER DEMO shows four methods of solving differential equations. Provision is included for changing the base function.

6+: DL+ is a number to replace "Volume Number xxx" with your own title. Try it out on copies, not on masters.

7+: FORECASTING will forecast the value of your accounts, providing that historical data is available.

8+: FUNCTION PLOTTER II will plot any function of the form

$$Y = F(X)$$

contained in line 2000. A sample function $Y = \cos(X)$ is included. Domain and range can be changed, together with degree of resolution. Point or continuous plot is available.

9+: FUNCTION ZEROS attempts to find rational zeros of an equation, with a given range of accuracy. The equation is not plotted.

10+: GAUSSIAN QUADRATURE I will integrate a function, using Gaussian Quadrature techniques. The function must be entered into line 30, and be of the form:

$$"DEF FN C(X) = F(X)".$$

11+: GEOMETRIC MEAN given a set of observations, will compute the geometric mean and geometric deviation of the data.

12+: GREATEST COMMON DENOMINATOR uses Euclid's algorithm, which it displays at the start. It shows the steps taken in arriving at the answer.

13+: HAIKU POETRY C.A.I. is a teaching guide for those interested in becoming outstanding poets.

14+: HANGPERSON is a sexless version of hangman, is lo-res colour.

15+: HISTOGRAM PLOT generates a text screen histogram, via a disk data file. Output can be to the screen or printer.

16+: INTEGRATION offers three methods of integrating a function. These are:

- Trap-Rect rule
- Gauss-Legendre
- Simpson's rule

The demo function is in line 20 and is: $Y = \exp(-X^2)$

17+: KINETIC ART PROGRAM is a continuous hi-res demo, generating some interesting shapes.

18+: LINEAR PROGRAMMING is an aid to those bent on keeping things straight.

19+: MATH WILLIE WORM is an excellent maths teacher for young children. Each correct answer generates 1/15 part of a hi-res worm. Addition, subtraction and multiplication tests are included. The degree of difficulty can be set by the teacher.

20+: MENU WRITER is a program to generate disk menus. A text file called "CAT" is created in the process.

21+: MONTE CARLO is an active hi-res demo of estimating area by the Monte Carlo method.

22+: MUFFIN when "BRUN", will convert DOS 3.2 disks for operation on DOS 3.3.

23+: NORMAL DISTRIBUTION will compute the frequency and probability of an event X.

24+: PERPETUAL CALENDAR will display the calendar of any month of any year after 1582.

25+: POKER STUD is a game of 5 card stud poker, using excellent hi-res card displays. Uses POKER STUD.X.

26+: POLAR ANGLES for 15° increments between 0° and 360°, this program computes $1-2\cos(G)$, $2+2\sin(2G)$, and $1+2\cos(G)-3\sin(G)^2$, where G is the angle.

27+: POLAR CO-ORDINATES given A and B, this program plots, in hi-res, the curve of $X=\cos(A^{\circ}\text{angle})$, $Y=\sin(B^{\circ}\text{angle})$, where X and Y are the horizontal and vertical legs of the right triangle formed by the rotating angle.

28+: PRIME FACTORS II calculates the prime factors of any integer.

29+: RECOVER when 'BRUN', will reinstate an Applesoft program in memory after an accidental NEW has been entered.

30+: ROOTS OF POLYNOMIALS will calculate the real roots of polynomials, given the coefficients and a starting value. Only one root is found on each run. Other roots, if they exist, are located by using a different starting value. The program halts after 100 iterations if no root is found.

31+: SIMPSON'S RULE integrates between chosen limits for known or unknown functions. Known functions must be entered in line 50 of the program prior to doing a run.

32+: SIMULTANEOUS EQUATIONS will solve these little headaches if the coefficients are entered, or will inform you if no solution can be found.

33+: SPEED READING LETTERS is not what the title suggests. It is a utility similar to the MENU program, allowing program selection by letter. It will not cope with long catalogs, but does show the free sectors remaining on a disk.

- 34+: SPEED READING PHRASES tests your ability to read quickly. Each correct answer reduces the display time for the next phrase. A wrong answer does the reverse.
- 35+: SPHERICAL traces a spiral curve in the form of a sphere (if you choose the correct constants). Many interesting shapes can be produced, and 4 sets of sample values are given. 80, 50, .35, 2, 2 produces the nicest sphere on my screen.
- 36+: TYPE SETTER is not the best way to transform your manuscript into a best-seller, but it does appear to work. Change line 275 if your printer is not in slot 2.
- 37+: UNCLE SAM'S JIGSAW is an excellent hi-res educational game where one has to identify the states of America by shape and location. Uses MAP.
- 38+: VISICALC FILE PRINTER is a utility to produce hard-copies of Visicalc files. The output is printed front-to-back.

SIDE TWO (-) NOTES:

- 1-: APHORISMS is a collection of computer related quotations.
- 2-: TEXT READER (UPPER/LOWER CASE) is a utility to display or print text files. Lower case is an option, if installed in your machine.
- 3-: EPSON GREETING is a simple little program to demonstrate the ease of accessing an Epson printer.
- 4-: EPSON LOWER CASE prints the lower case alphabet, even if you have no LC chip installed.
- 5-: EPSON CATALOG DBL STRIKE will print the current disk catalog in double strike mode.
- 6-: EPSON MX80 DEMO 1 is a short demo of the different type styles available to an Epson printer.
- 7-: EPSON MX80 DEMO 2 allows you to select the text style, density and text to be printed.
- 8-: EPSON MX80 SETUP is a well presented utility which allows any Epson features to be set. It includes a letterhead print, vertical text centering and a link with the Applewriter.
- 9-: EPSON MX80 CATALOG gives an enhanced print of a disk catalog and allows a header to be printed.
- 10-: EPSON MX80 LABEL MAKER makes it easy to generate labels. It is set for 5 lines of print on a 3.5" x 0.9375" label, but this would not be difficult to change. Uses EPSON MX80 LABEL.PIC.
- 11-: EPSON MX80 LETTERHEAD is a demo of letterhead printing routines.
- 12-: EPSON MX80 PROGRAM LIST is a utility to list programs on the printer. The program name is printed as a header in double width.
- 13-: EPSON MX80 REMINDER CALENDAR will print a calendar in chosen monthly increments, including reminders, which are entered into the program as data statements.
- 14-: PRINTER CENTRONICS 779 is a routine to allow text formatting prior to printing. Left, right, both left and right, and centered text are allowed. This program could not be tested due to the lack of a suitable printer.
- 15-: PRINTER IDS is an untested graphics printer for an IDS printer, interfaced via the games port.
- 16-: PRINTER IDS SETUP 1 appears to be a routine to print the disk catalog on an IDS printer, interfaced via the games port. Untested.
- 17-: PRINTER IDS SETUP 2 appears to be a routine to select various fonts on an IDS printer, interfaced via the games port. Untested.
- 18-: IDS 255 PRINTER DEMO is a simple demo for any printer connected to slot 1.
- 19-: ID 440 SCREEN DUMP is an untested graphics dump routine for an ID440 printer with a parallel interface in slot 1. Uses ID 440 SCREEN DUMP.X.
- 20-: PAPER TIGER HGR DUMP is a graphics dump routine for a Paper Tiger printer connected to slot 2. Uses PAPER TIGER HGR DUMP.X. PAPER TIGER.PIC is a sample picture.
- 21-: SILENTYPE BOLD PRINT is a routine to produce bold print on this printer. Uses SILENTYPE BOLD.X.
- 22-: FOURIER will compute Fourier series for input data, and allows regression. No graphics.
- 23-: GAUSSIAN QUADRATURE II gives a 32 point integral of a function entered on line 10.
- 24-: PERIODIC TABLE OF ELEMENTS is self-explanatory.
- 25-: RENAME DISK allows one to replace "DISK VOLUME" with another 11 character name.
- 26-: RENUMBER VOLUME will allow one to change the volume number of a disk. Uses RENUMBER VOLUME.ML.
- 27-: SSM AIO CARD is a routine to setup parameters for an SSM AIO card.
- 28-: SWORDS & SORCER is an adventure game where you have to rescue an imprisoned princess.

- 29-: UNDELETE INSTRUCTIONS gives details on how to use UNDELETE, which will recover deleted files, provided that no others have been saved since the old file was deleted. UNDELETE 16 SECTOR ONLY! is a warning that these programs are for 16 sector disks only.
- 30-: UNDELETE INSTR runs UNDELETE 16 SECTOR, which is similar to 29-, but asks for a file name, rather than searching for deleted files.

AUG DISK #15

SIDE ONE (+) NOTES:

- 1+: ANIMAL is an Applesoft version of the program provided on the DOS System Master disk.
- 2+: ART AUCTION is a game where you have to buy and sell paintings in competition with the computer. The aim is to make the most profit. Some paintings may be forgeries, however.
- 3+: BALL CATCHER is a hi-res game where you have to catch the bouncing ball with a paddle.
- 4+: BOMBARDMENT is a lo-res graphics game where you have to bomb the computer's four outposts before it bombs yours.
- 5+: BOXED IN is a crafty hi-res graphics game where one has to press the number keys in the correct order, so as to end up with a black centre square and eight surrounding white squares.
- 6+: DEPTH CHARGE is a keyboard driven 3-D game, where one has to specify the target co-ordinates and depth of the enemy submarine.
- 7+: DOGFIGHT is a hi-res paddle game for two players. Each has 16 missiles, and the winner is the one who scores 5 hits first.
- 8+: DOORS is a game where one has 24 tries with 11 keys to open 5 doors.
- 9+: ELEVATE is a game where one has to enter the elevation of the gun, to ensure a hit on the target.
- 10+: FRENCH MILITARY GAME is a game of strategy, which becomes more difficult to win with each successive game. The object is to trap the enemy so that he cannot move his men.
- 11+: GOLF 1 is a text game of golf, with a wide range of clubs, hole types and handicaps. Well presented.
- 12+: KLINGON CAPTURE is a good text game where one has to capture a Klingon battle cruiser without damage, by preventing its movement.
- 13+: MONSTER CHASE is a lo-res game where one has to outwit a monster who is chasing you. Various levels of difficulty are available. Keyboard driven.
- 14+: NUMBER GUESS is a game where one has to guess a number between 0 and 100. The computer offers clues on how close you are.
- 15+: OBSTACLE is a text game where one has to cross an obstacle course with the least number of moves, without striking any obstacles.
- 16+: PETALS AROUND THE ROSE is a rather boring game where one has to repeatedly guess the score of 5 rolled dice. Each possible score has to be guessed at least once to reach the finish.
- 17+: ROTATE is a game where 16 random letters, in a square, have to be sorted into order. On each move, only 4 letters in an adjacent square will rotate clockwise. Good game of strategy.
- 18+: STAR TREK is a text version of this popular Klingon destroying game. Seems quite comprehensive.
- 19+: STAR TREK SUPER is an improved version of 18+, offering a larger screen.
- 20+: STOCK MARKET GAME is practice for those interested in playing the stock market. One is allocated \$10 000 to start.
- 21+: WORD PUZZLE is a sort of crossword, which produces a hard copy of a matrix, incorporating a selected range of words.

SIDE TWO (-) NOTES:

- 1-: ADVANCE AUSTRALIA FAIR is a good musical rendition to start off this disk.
- 2-: ART ENCORE is a continuous, dynamic, hi-res display of varying rectangular shapes. Very well done.
- 3-: BIRTHDAY DISPLAY is a combined musical and lo-res graphic birthday greeting.
- 4-: BLACKJACK STRATEGY is a series of instructions on how to play Blackjack, followed by a game against the computer.
- 5-: BOWLING is a lo-res simulation of ten-pin bowling. Unfortunately it doesn't quite represent a true bowling alley in performance. Uses LORES SLIDE BOWLING.
- 6-: BOWLING (MONOCHROME) is a variant of the above game.
- 7-: COMBAT is a rather strange text game involving Army, Navy and Air Force attacks on your enemy.
- 8-: CRAPS BW is a next text game of craps. Any number of players can take part.
- 9-: CREATE A GALAXY allows you to do just that, in hi-res colours. The exit is ineffective, but reset cures that.

- 10-: FOOTBALL PREDICTIONS is for the American Football League. It may be a source of ideas for anyone wishing to construct an Aussie version. Stores data on tape.
- 11-: FOX AND HOUNDS is a nifty little text game where one has four uni-directional hounds against a bi-directional fox. The object is to trap him so that he cannot move. Moves are diagonal only.
- 12-: GOD'S EYE is a generated hi-res picture of an eye.
<CR> exits.
- 13-: GOLD MINE is a good text graphics mining game, where one has 365 days to mine as much gold as possible.
- 14-: GOLF II is a variant of GOLF I, on side 1 of this disk.
- 15-: HI Q is a good peg-board game, where one has to remove as many of the 32 pegs as possible, by leap-frogging into an empty hole.
- 16-: HIRES SYMMETRY is a constantly changing hi-res display, based on a rectangular structure.
- 17-: HOCKEY I is a text game of hockey between two teams of six players.
- 18-: HORSE RACE III is a hi-res horse race where one bets on the potential winner, then watches the race.
- 19-: LITERATURE QUIZ is a test of your knowledge of children's fairy stories.
- 20-: LOTTO NUMBERS will choose numbers for your Lotto games.
- 21-: MAROONED IN SPACE is a teaching game where one has to determine the name of the planet which your spaceship is orbiting, before a course for Earth can be plotted. Clues are given.
- 22-: POOLS NUMBERS is similar to LOTTO NUMBERS. It chooses 11 values for your entries.
- 23-: RANDOM COMPUTER MUSIC is just what it implies.
- 24-: RANDOM TUNE GENERATOR is a more elaborate version of 23-.
- 25-: ROBOT BW is a text graphics game where one has to avoid robots and scanners.
- 26-: ROLL A DICE is a lo-res dice rolling utility.
- 27-: SURVIVE your ship and one UFO are to sole survivors. You have to try to survive.
- 28-: TOSS A COIN is a random coin tossing utility.
- 29-: TWO COINS TOSS is twice as good as 28-.
- 30-: TWONKY I is a blind maze game where you have to reach to objective and avoid the Twonky on the way.
- 31-: WORD MAZE MAKER is almost identical to WORD PUZZLE on side 1 of this disk, but this one only outputs to the screen.

AUG DISK #16

SIDE ONE (+) NOTES:

- 1+: DISKETTE CARE AND HANDLING is an Applesoft file which informs the user on the DO's and DON'T's of diskette use.
- 2+: FREE SECTORS displays the number of free sectors remaining on the current disk.
- 3+: MISPRINTS is a listing of various misprints in the Apple manuals.
- 4+: PROGRAMMING TIPS is similar to 1+, above, but contains various tips for Applesoft programmers.
- 5+: SHOW A HIRES SLIDE displays a hi-res picture which you select from the disk catalog. SLIDE COLOUR TEST and SLIDE-MONITOR TEST are sample pictures.
- 6+: TITLE FRAMER WHITE BARS is a short program which will automatically centre a title entered into line 30, and frame it in with inverse bars.
- 7+: WHITE TEXT FRAME is similar to the above, but allows for a full screen title.
- 8+: CIRCLE AREA computes the area of a circle, given the radius.
- 9+: CIRCLE CIRCUMFERENCE computes the circumference of a circle, given the radius.
- 10+: COIN TOSS EXPERIMENT prints the results of the tosses of various numbers of coins.
- 11+: CURRENCY CONVERSIONS prints the results of the conversion between dollars and various currencies, for the specified exchange rates.
- 12+: SALES TAX CALCULATION will calculate and display the amount of sales tax, and the price including tax, given the base value and the tax rate.
- 13+: STATIONERY SUPPLIES CHECK LIST is a useful reminder of your supply requirements. More can be added to the list by modifying the data statements in the program.
- 14+: SCIENTIFIC BOO BOOS displays some witty theories held by ancient scientists.
- 15+: SOUND CRASH is a short Applesoft program to simulate the sound of a crash.
- 16+: SYNONYM tests the user's ability to think of the synonyms of various words.

- 17+: BBS is a text file containing an alphabetical list of American bulletin board systems.
- 18+: MODEM ALARM CLOCK is the first of a series of programs for the D.C. Hayes Micromodem... The titles are self explanatory, but the programs have not been tested, due to the lack of suitable hardware.
- 19+: TEXT FILE READ AND PRINT I allows one to transfer a text file to the screen or printer.
- 20+: AUTO NUMBER I loads a small machine language program (AUTO NUMBER I.X) into memory. This routine then auto-numbers your program as you type it in.
- 21+: BASIC-APPLESOFT loads Applesoft Basic into memory, for those few who do not have it in ROM.
- 22+: BENCHMARK displays the results of tests between 2 different machines.
- 23+: BSTAT I prints the starting address and length of a specified binary file.
- 24+: BUTCHER writes and then reads a set of data to/from a text file. An example of this is BUTCH.
- 25+: INVISIBLE SIGNATURE is a short program which disguises your copyright and credit lines in Applesoft programs.
- 26+: TAPE SPEED TABLE prints the time available on different length tapes running at various speeds on single and double track machines.

SIDE TWO (-) NOTES:

- 1-: TYPE SETTER is a very basic type-setting program.
- 2-: CHARACTER DECODER displays the character codes for specified strings, and also converts between decimal, hex and binary.
- 3-: DUMP MEMORY AND ALTER allows the user to display and alter memory in various formats.
- 4-: DUMP PAGE dumps memory to the screen, a page at a time, in numerical or ASCII format. Uses DUMP PAGE.X.
- 5-: EDIT FILE is a relatively basic text editor. Instructions are given in EDIT FILE.DOC.
- 6-: FORMAT \$ formats and prints the total of various amounts of money, which are entered by the user.
- 7-: FORMAT \$ AND CTS is similar to the above, but includes cents, and is for utilization in your own program.
- 8-: FORMAT % is similar to the above, but is for formatting percentages.
- 9-: IB TO AB converts an integer basic file to a text file which can then be "EXEC"ed into Applesoft basic.
- 10-: LIST STOP AB allows you to use any key to start/stop the listing of an Applesoft basic program.
- 11-: RESTORE DELETED FILES will list the deleted files on a disk, and allow the user to restore them. Note that this may not work if other files have been written to the disk after the file was deleted.
- 12-: RESTORE LINE displays the data from a specified program line number.
- 13-: SORT ALPHA is the first of a collection of alpha-numeric sorting programs. They all begin with SORT...
- 14-: CAPTURE IB AB saves programs as text files, for "EXEC"ing into either Integer or Applesoft basic.
- 15-: DISK SUMMARY is a disk menu utility for selecting and running programs. It requires Ampersort II (a copyright program) in order to run. DISK SUMMARY EDIT allows the user to edit the list of files and their descriptions. Both programs use Z PROG.LIST.
- 16-: DISPLAY ASC PAGE BY PAGE displays memory in ASCII format, page by page, from a given starting point.
- 17-: DOG TAG CREDIT LINES permanently appends your credit lines to your own programs. Uses DOG-TAG EXEC.
- 18-: ERROR HANDLER is a program debugging aid which is appended to your program. When an error occurs, it's type will be displayed along with the line number on which it appears.
- 19-: GREETING SUBROUTINE is an interesting little routine which, when modified and placed at the beginning of your program, generates your title page.
- 20-: H14 DRIVER.ASC100.L\$FF can be used with a communications interface card to drive a Heathkit H14 printer. Instructions can be found in H14 INSTRUCTIONS.
- 21-: POKE BINARY TO BASIC will convert a machine language routine into BASIC poke statements, which are stored in a text file to be "EXEC"ed into your program.
- 22-: RAM TEST 48K 30 MINUTES does a test of the 48k RAM bank which takes 30 minutes to complete.
- 23-: SMALL SORT V2 is a heapsort program for sorting between two text files. TEST DATA 1 is a sample file.
- 24-: TEXT FILE CHAR HEX DUMP is a small routine to print the characters and their corresponding hex values, for a given number of records.

- 25-: HELLO is a short and simple disk menu program.
- 26-: COPOGEN will convert a machine language routine into a text file containing a series of data statements, together with a subroutine to poke the data into memory. The text file can then be "EXEC"ed into your basic program.
- 27-: H14 DOCUMENTATION gives details about a set of routines which load at different locations in memory and drive the Heathkit H14 printer. All the routines begin with H14 DRIVER...
- 28-: ASCII is a machine language routine to drive a serial printer via port AN0 (pin 15) of the games paddle connector.
- 29-: ASCII PRINTER DRIVER is a source code file (presumably AppleWriter) for a machine language routine to drive a serial printer with handshaking and paging, via the games paddle connector. The serial data line is AN0 (pin 15), and the Handshaking line is PB1 (pin 3). Pin 8 is the ground connector. Provision is made for 110 and 300 baud operation.
- 30-: BAUD RATE ADJUSTMENT is a routine to set the baud rate on I/O boards via software. The slot can be selected, but the usable I/O board(s) are not defined.
- 31-: DRIVER A768 L176 is similar to ASCII, but appears to allow handshaking via PB2 (pin 4) of the games port.
- 32-: LABEL NUMBERING prints labels for use on boxes or cartons containing a certain number of items.
- 33-: PICTURE LOADER loads a hi-res picture into memory.
- 34-: PRINTER PR40 BANNER will print an entered message as a large banner.

AUG DISK #17

SIDE ONE (+) NOTES:

- 1+: APPLE TUTORIAL is the start-up program for a useful series of Applesoft tutorials. The program is menu-driven and the options are:
 - Guidelines
 - Getting Started
 - Helpful Hints
 - Basic Tutor Part 1
 - Basic Tutor Part 2
 - Quick Reference Guide to Basic
 The program uses MENU, STRT, HELP, PT.1, PT.2 and QREF, none of which can be run independently due to the presence of embedded backspaces in the disk titles.
- 2+: VIDEO TEST generates any one of six test patterns commonly used by T.V. service engineers.
- 3+: DECISION MAKER will randomly decide YES or NO if you are lost for a decision.
- 4+: DICE ROLLING EXPERIMENT simulates the rolling of a die as many times as you desire, and then reports the results.
- 5+: EASTER DATES lists the dates of Good Friday and Easter Sunday for the next 20 years.
- 6+: GOING ON HOLIDAYS CHECK LIST prints a list of things to do prior to going away on holidays. Lucky you!!
- 7+: LETTER FREQUENCY lists the relative frequency of the individual letters of the alphabet, as they occur in the English language.

SIDE TWO (-) NOTES:

- 1-: DECISION MAKING AIDE DOC. contains the documentation for DECISION MAKING AIDE, which is a much more sophisticated aid than DECISION MAKER on side 1 of this disk. The various factors affecting the decision are allocated values and importance, prior to the big decision being made.
- 2-: APPLE SKETCH is a very simple graphics editor, written in Applesoft.
- 3-: PRINT CATALOGS allows you to obtain a continuous print-out of all your diskette catalogues.
- 4-: SLOT SEARCH peeks at certain locations in order to determine what cards you have in your Apple.
- 5-: APPLESOFT LISTER INSTRUCTIONS contains the documentation for APPLESOFT LISTPRINTER, which is a machine language routine to format your program listings into 60 lines per page. The program title and page number are printed at the top of each page.
- 6-: PAGE DUMP will display one page of memory at a time, in code or ASCII format, and allows you to flip backwards or forwards through memory.
- 7-: CALENDAR is a perpetual calendar program, which will list to the screen or printer.
- 8-: HEXCON is a short Applesoft program performing number base calculations.

- 9-: AUTHORSHIP will renumber entered credit lines, of Integer Basic programs, to be greater than 32767, for appending to your program.
- 10-: BASIC PROGRAMMING is the menu for four different lessons on Integer Basic programming. Uses BASIC PROGRAMMING 1, BASIC PROGRAMMING 2, BASIC PROGRAMMING 3 and BASIC PROGRAMMING 4.
- 11-: MINI ASSEMBLER TUTORIAL is a teach yourself guide to the Mini-Assembler contained in ROM on Apple II (Integer) machines, or automatically loaded (with Integer Basic) into the language card of II+ machines when DOS 3.3 is booted. Note that //e DOS masters do not currently include Integer, hence an Integer loading version will have to be obtained. The tutorial includes a "Super-high frequency, multi-tone geni".
- 12-: TOP DOWN PROGRAMMING demonstrates the value of "top down programming" techniques for better program design and presentation.
- 13-: DOS SYSTEM INSTRUCTIONS helps the new user to understand various functions in DOS.
- 14-: SUPPLEMENT MINI ASSEMBLER makes available to Applesoft/Autostart ROM users (II+ and //e machines), the Mini-Assembler step and trace functions, previously accessible only through Integer basic and the regular F8 ROM. Uses SUPPLEMENT.X.
- 15-: WHY COMPUTERS CAN contains ten reasons why a computer can do more work than a human.
- 16-: QUESTIONS-COMPUTERS presents you with twenty questions on computer knowledge.

AUG DISK #18

SIDE ONE (+) NOTES:

- 1+: TEXT HELLO is the menu for a series of 6 text files:
 - TEXT INTRO is a profile of the author, Larry Anderson, and his equipment.
 - TEXT HOW TO is a note on how to learn from the programs on this disk.
 - TEXT REDBOOK describes errors in the "simple tone subroutine" in the Apple Redbook (the original Apple manual).
 - TEXT PEEK POKE CALL lists various Applesoft peeks and pokes, with descriptions.
 - TEXT PROGRAMMING is a collection of programming hints.
 - TEXT SOFTWARE relates to a program swapping system called "Apple Swap".
- 2+: TEXT FILE READ is a program to read text files (such as those above).
- 3+: TEXT FILE WRITE is a program to write text files.
- 4+: PROGRAM DEVELOPMENT PACKAGE is a useful utility to help Integer Basic programmers to write working programs.
- 5+: BINOMIAL DISTRIBUTION calculates the probability of obtaining a given number of successes after a given number of trials.
- 6+: CALCULATOR is a simple program to simulate a calculator. It also incorporates circle area and Fahrenheit to Celcius computations.
- 7+: CALC PI TO 1000 DIGITS will calculate the value of pi with up to 1000 digit accuracy, if you can wait 44 hours!!
- 8+: EXTERIOR BALLISTICS will calculate the drop, remaining velocity and the correction from given values for ballistic coefficient, muzzle velocity and range, for a given number of ranges.
- 9+: FAST FOURIER TRANSFORM calculates and plots Fast Fourier Transformations. FFT is an improved version, and FFT+ is the deluxe product.
- 10+: HEX-DEC CONVERTER will convert numbers between hex and decimal, in both directions.
- 11+: HARMONIC ANALYSIS calculates the coefficients of a Fourier series to the fifth harmonic.
- 12+: HEX CONV will convert between hex and decimal in both directions. A number of other functions are included.
- 13+: LOOP ANTENNA will calculate the optimum number of turns for a loop antenna intended for AM radio reception.
- 14+: LONG DIVISION is an excellent tool for displaying the procedure and results of a long division operation.
- 15+: METRICS LENGTH is the first of a series of self-explanatory programs for conversion between the English and Metric systems. The others are: METRIC VOLUME, METRICS KITCHEN and METRICS TEMPERATURE WEIGHT.
- 16+: MULTIPLY will multiply two numbers, or raise a number to a power.
- 17+: MATH PRACTICE will help you to practice multiplication, division, addition and subtraction.

- 18+: NUMBER BASE CONVERTER facilitates conversions between different bases.
- 19+: PERMUTATIONS-COMBINATIONS computes the number of permutations and combinations of N objects taken D at a time.
- 20+: PRIME FACTORS OF AN INTEGER will take any integer and calculate its prime factors.
- 21+: PLOT will plot single-valued functions of x.
- 22+: QUADRATIC SURFACE will give point values at regular intervals over a quadratic surface.
- 23+: REACTANCE CALCULATIONS will solve for capacitance, inductance, frequency, capacitive reactance and inductive reactance.
- 24+: SIN PLOT uses hi-res graphics to display the sin function.
- 25+: TRANSISTOR PARAMETERS given sufficient data, this program will compute the remaining transistor parameters.
- 26+: XLINE INPEDANCE will calculate the characteristic impedance and length of a transmission line used to match a source and load impedance.
- 27+: APSOFT MUSIC TONE TESTER is a basic musical tone tester, written in Applesoft.
- 28+: APSOFT SOUND EFFECT TESTER is similar to the above, but is for sound effects.
- 29+: GUITAR PITCH PIPE is a short program to tune the strings of a guitar.
- 30+: INTERESTING SOUND EFFECTS uses both paddles to produce an infinite range of sounds.
- 31+: JUST BONES gives you a poem to help you learn where bones are located in the body, and how many there are.
- 32+: DRAMA FESTIVAL CHECK LIST prints out a list of things to remember if you are running a drama festival.

SIDE TWO (-) NOTES:

- 1-: CONCENTRATION is a good hi-res game, where you have to select two matching cards out of a pack.
- 2-: CONNECTION is a hi-res game where you gain points by filling in boxes. Uses paddles.
- 3-: CRIBBAGE is another very good hi-res game. This time it is Cribbage, played against the computer.
- 4-: HOOVER DAM is a good lo-res game in which you have to run the Hoover Dam generating facility.
- 5-: STOCK TRADER is a game in which you play a market of six stocks, using \$10 000 of your life's savings, by trading on the weekly results for a year.
- 6-: LIFE is yet another version of this classic game. This one is in Integer Basic.
- 7-: CHICKEN is a short program in which you control the walking speed of a hi-res chicken.
- 8-: APPLE ROSE will generate continuously changing rose-type hi-res patterns.
- 9-: ZOMBIE ISLAND is another version of the popular game, Escape. Here you have to avoid the Zombies and lure them into pot-holes.
- 10-: FIVE GUESSES is a simple game where the computer thinks of a five-letter word. You have five guesses at a word.
- 11-: NIGHTMARE is a strange game, the object of which is to discover the object of the game!
- 12-: KEYNOTE is a short machine-language routine causing each key to produce a different note when pressed.
- 13-: ORGAN uses keys 1 to 8 to produce a musical scale.
- 14-: INVADERS is a hi-res graphics space invaders game, written in Applesoft.
- 15-: INVISIBLE TANK is a lo-res graphics game for two players, each with invisible tanks. The object is to hit your opponent ten times.
- 16-: SPIRO is a simple program which draws hi-res spirals.
- 17-: MULTICOLOR 1 is a short program to draw pretty hi-res patterns on the screen.
- 18-: ROAD RACER INTRO is the start-up program for ROAD RACER. RACER MACHINE is also used. The game itself is in lo-res graphics, and the object is to race a car through a winding course, the difficulty of which is set at the beginning.
- 19-: STARWARS SOUND EFFECTS is a short program to produce various sounds from Star Wars.
- 20-: COMPUTER MUSIC is a short program in which you have to help the computer compose a piece of music.
- 21-: AWARENESS TEST is a very simple program which asks you to pick out the number of occurrences of a certain letter in a written passage.
- 22-: BRAIN BUSTERS is a fairly lengthy program which presents you with a selection of questions, some of these being fairly difficult to answer.

AUG DISK #19

SIDE ONE (+) NOTES:

The Beginner's Cave is the first of a series of text adventure games for the Apple. It is also the master for the series, and must be run before embarking on any other adventures in the series. You will be prompted to change disks at the appropriate time.

NOTE: With all the Eamon adventures, a file titled FRESH MEAT will be created and/or amended on the disk. This means that the disk will be written to. Where the adventure is on side 1, remove the write-protect tab. For side 2 games, either cut a notch in the disk at the appropriate place, or copy the program onto the front side of another disk.

SIDE TWO (-) NOTES:

This is the Eamon adventure #2, The Minotaur's Lair. Note that side 1 of this disk is required to run this program.

AUG DISK #20

SIDE ONE (+) NOTES:

- 1+: ANNUITY given the regular deposit amount, periodic interest rate, number of deposits per year, and number of years/months, the future value will be computed.
- 2+: ANNUITY PRINCIPAL & INTEREST computes the monthly payments and interest paid on a loan, given the loan amount, annual interest rate and number of months. The balance after 'N' payments can also be computed.
- 3+: ANNUITY REGULAR DEPOSITS is similar to program 1+.
- 4+: AVERAGE GROWTH RATE given sufficient data for previous years, the program computes the average growth rate, and will project sales for future years.
- 5+: BOND PRICE & INTEREST computes the price and accrued interest for bond accounting. Note: all data is expressed per \$100 per bond value.
- 6+: BOND VALUE is an example program to compute bond values for any date. Sample data is provided, but since it is stored in data statements, flexibility is poor.
- 7+: BUDGET MONTHLY is a well-presented program to handle domestic budgets, but does not store any data.
- 8+: CALENDAR PERSONAL is a personal diary program, but is tape based, and will require modifications to use disks.
- 9+: DECISION MATRIX will aid you in making decisions. Needs some knowledge of statistics.
- 10+: FINANCIAL PAK is a collection of 18 programs to aid the businessman and investor.
- 11+: INTEREST EARNED will compute the interest on an initial investment, plus deposits/withdrawals.
- 12+: INTEREST RATE will compute the annual interest rate on an investment, given initial and final values, and number of years.
- 13+: INVESTMENT ANNUITY FORECASTS is a collection of 7 programs covering financial investments.
- 14+: LIFE MGMT AND FINANCES is a program to analyse your home expenditure.
- 15+: LIFE MGMT TEXT ORGANIZER is from the March, 1980 issue of Personal Computing. The article would help in explaining the function of the program.
- 16+: LOAN AMORT SCHEDULE produces a detailed printed schedule of the repayments of a loan.
- 17+: LOAN DIRECT REDUCTION given sufficient data, the program one of the 5 unknowns relating to a loan.
- 18+: LOAN INTEREST computes the payments and interest (compounded daily) on a loan.
- 19+: MARKET EVALUATOR PAK is a collection of 6 utilities for the stock market investor.
- 20+: MORTGAGE CALCULATION computes detailed or summary data relating to mortgages.
- 21+: REGULAR DEPOSITS I computes the payments required to arrive at a certain final value.
- 22+: SALES TAX AT 6% computes sales tax, as you would expect.
- 23+: SECURITY ANALYSIS will produce an analysis based on the capital asset pricing model, given at least 4 observations, which can be daily, weekly, monthly or yearly. Storage of data is on tape.
- 24+: SECURITY ANALYSIS COPY DATA is a utility to copy data for the above program onto back-up tapes.
- 25+: SIMPLE INTEREST computes the future value of a regular deposit.
- 26+: STOCK OPTION ANALYSIS computes the option value and hedge ratio.

- 27+: STOCK OPTION PRICING I uses the Black-Scholes formula to compute option prices.
- 28+: STOCK OPTION PRICING II computes option prices with discontinuous results, where the Black-Scholes formula does not apply.
- 29+: STOCK PORTFOLIO VALUATION computes % change of each stock original portfolio value, % change in value and annual dividend yield as % of current market value.
- 30+: TRIP COST ANALYSIS will estimate the cost of a projected trip.
- 31+: VISICALC COORD FORMULAS lists the formulas, rather than the values, for the co-ordinates of a stored Visicalc file.
- 32+: VISICALC D FILE PRINTER will produce listings of Visicalc files, with decimal points aligned and with a specified number of decimal places.
- 33+: VISICALC FORMULAS is similar to 31+.

SIDE TWO (-) NOTES:

- 1-: BUSINESS FINANCE is a package for computing depreciation, interest, loans, investments, deposits and amortization.
- 2-: CHECK STB is a simple program for arriving at your current bank balance, by working through your cheque book.
- 3-: DEPRECIATION AMOUNT computes the depreciation for any year, given the starting value and rate.
- 4-: DEPRECIATION RATE computes the % rate, given the buying and selling price, and the years between.
- 5-: DEPRECIATION SCHEDULES offers three options: straight line, sum of years digits and declining balance.
- 6-: DEPRECIATION STRAIGHT computes a depreciation table on a straight line basis.
- 7-: DISCOUNT COMMERCIAL PAPER given the future value, discount rate and days to maturity, the program computes the discount and cost.
- 8-: HOUSEHOLD EXPENSES PROFILE produces an analysis of household expenses, but does not store data for future use.
- 9-: INCOME TAX 1040 FRO 77 is a program to guide you through the US Federal Tax Form 1040. Limited use in Australia!
- 10-: INVENTORY COMPANY is the bones of an inventory program. It is left to the user to add the disk file portion of the program.
- 11-: INVENTORY HOME I is a program which can be used for simple inventory systems, with 200 x 35 character records (as set by the program). When entering records, type "END" to terminate input. INVENTORY HOME I.REC is a sample file.
- 12-: INVENTORY MODEL is a guide to inventory levels for various conditions, and whether an item should be stocked.
- 13-: INVENTORY SHORTEST is a very simple program for writing inventory files comprising item number and cost. To terminate input type <CR> in response to 'item no?'.
- 14-: INVENTORY SHORTEST READ will read the files created by program 13-.
- 15-: INVENTORY. is a part number based system, with up to 64 files. To get started, read INVENTORY.DOC, but note that the program is referred to as INV.1. MASTER.DIRECTORY is used to store the list of file names.
- 16-: INVENTORY.FILE CREATE and INVENTORY.FILE READ are a pair of programs allowing the creation and operation of a system to suit your needs. Uses MASTER.FILE.
- 17-: KEOGH SAVING PROGRAM calculates interest earned, compounded every 6 months. Screen or printer output.
- 18-: LEASE COMPUTATION will calculate the monthly cost of a lease from the First Tennessee Bank, or UC Leasing.
- 19-: REAL ESTATE PLOT is a sample real estate sales display, giving data, price and a plot plan in hi-res. Uses REAL ESTATE PLOT.X.
- 20-: STOCK MARKET FORECASTER is a tape based program. Given 10 consecutive days data, the program will attempt to forecast the trends.
- 21-: STOCK MONITOR I is a simple program to monitor the state of your stocks.
- 22-: STOCK MONITOR II is a slightly improved version of 21-.
- 23-: STOCK VALUATION uses the Molodovsky method to compute the intrinsic value of a company's stock.
- 24-: TREND LINE ANALYSIS is a well documented analysis program, including a hi-res plot of the input data.

AUG DISK #21

SIDE ONE (+) NOTES:

This is Eamon Adventure #3, The Cave of the Mind.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

This is Eamon Adventure #4, The Zyphur Riverventure.
Note: Disk #19, Eamon Master is required to run this program.

AUG DISK #22

SIDE ONE (+) NOTES:

The first 6 programs are by Ferg. Brand.

- 1+: MENU WRITER a program to reduce the number of titles displayed to the minimum. The HELLO program was created by this utility. Read M.W/DESCRIPTION via TEXTREAD or TEXT.READ.V4 for details.
- 2+: BYTESTRING SEARCH a utility to locate bytestrings in memory. Read BS/DESCRIPTION for details.
- 3+: DISKTRANSLATE a utility which employs techniques described in 'Beneath Apple DOS'. Uses DT/BIN. Read DT/DESCRIPTION for details.
- 4+: HRCG DEMO a utility to add to the DOS Toolkit.
- 5+: MUSICMAKER a utility which allows you to create tunes via the keyboard, and modify and/or save the results. Uses MM/KEYBOARD, MM/KEYBOARD2 and MM/SOUND. SCALE is a sample tune. Read MM/DESCRIPTION for details.
- 6+: SHAPER a utility for generating hi-res shapes using the lo-res screen. Read SH/DESCRIPTION for details.
- 7+: CREATE a program developing utility, adapted from an article in Byte, December, 1981, by G. Crammond. Instructions appear in the program, but the Byte article helps a lot.
- 8+: EVERY HIRES COLOUR 255 colours for those with colour displays.
- 9+: HIRESLOT.6 a plotting utility from Andrew Cunningham. Sample data is in the file TEST.DAT. Associated files are HIRESLOT.LISTING and PLOTFILE.EDITOR. Read HIRESLOT.DOC for details.
- 10+: LISTER.NC a subroutine which can be appended to an Applesoft program to produce a structured listing.
- 11+: PICK-A-BASE a utility to convert from one base to another. Becomes untidy after screen is full.
- 12+: BOOK REVIEW Andrew Cunningham's views of J.F.Wakerley's book "Computer Architecture and Programming", John Wiley & Sons, 1981.
- 13+: TEXT.READ.V4 a text file reader with printer and 80 column card facility.
- 14+: BETTER MENU is OK for catalogs occupying only one screenful.
- 15+: BINARY FILE FINDER gives the start address, length and end address for the last binary file loaded. Use 'CALL 768' to run. Won't work if binary file loads into \$300-\$346 space, which is used by this program.
- 16+: CODE-TO-POKES converts a RAM-resident binary file into a series of Basic pokes, and stores the Basic program on disk.
- 17+: DOUBLECAT produces a two-per-line catalog listing of a disk. Long names are abbreviated.

SIDE TWO (-) NOTES:

- 1-: DIRTY TRICKS hide your program from prying eyes.
- 2-: DISK MAP.L a lo-res coloured graphic display of free, used and faulty sectors on a disk. 'BRUN' to start and 'CALL 2051' to repeat.
- 3-: DOS CMD FINDER lists DOS commands, with memory locations.
- 4-: DISPLAY PAGE loads and/or displays either hi-res screen. CHURCHILL is provided as a test picture.
- 5-: FIX SECTOR CNT.L purports to correct the sector size listed for each file. Try out on a copy first. Run as for DISK.MAP.L.
- 6-: IMPROVED CTLG.L provides useful data about the disk files, including deleted entries. 'BRUN' to start, 'CALL 2051' to repeat.
- 7-: HEX ON HIRES is a hi-res demo program.
- 8-: RECONSTRUCT VTOC.L uses the disk file directory to rebuild a faulty VTOC. 'BRUN' to start, 'CALL 2051' to repeat.
- 9-: SECRET reveals control characters in files and catalogs.
- 10-: THIRTY SIX COLORS is a hi-res display.
- 11-: TWENTY ONE COLORS ditto.
- 12-: LISTER TREND.COM 200 is a utility for this printer, with All-G interface card in slot 1. Run this program, load program to be listed, then EXEC LISTER.
- 13-: PRINTER IP 125 routines for the IP 125 and IP 225 printers. (Integer)
- 14-: PRINTER PATCH.DOC describes mods to the Apple HSS interface card to work with printers having a busy line. Uses PRINTER PATCH.

- 15-: APPEND BINARY TO APPLESOFT is a routine to convert RAM resident binary files into a series of data statements, which can then be added to your Basic program.
- 16-: APPLESOFT LINE WRITER is a utility to help to take the drudgery out of programming. Instructions in the program.
- 17-: CMP D1 & D2 AFTER COPY lists tracks and sectors which are different. 'CALL 28672' to run after BLOADING.
- 18-: FINDERX displays control characters on screen. 'CALL 733' to activate.
- 19-: INT LINE X-REF (CALL2048) gives a cross reference listing of Integer Basic programs. 'CALL 2048' to run, with Integer in memory.
- 20-: MEM.DUMP gives a formatted hex and ASCII memory dump to the screen. 'CALL 768' to re-run.
- 21-: SOFSYMPREF lists Applesoft variables against the line numbers. Load Basic programs and 'BRUN SOFSYMPREF'. Repeat with 'CALL 28000'. SOFSYMPREF.S is a source listing with instructions. Use MEM.DUMP 1D00.27A7 to view.
- 22-: SUPER HIRES GRAPHICS ? draws hi-res shapes in Integer. The program has some bugs, but considered to be worth including. SUPER HIRES GRAPHICS.X must be BLOADED first. If anyone fixes the bug, please tell Librarian.
- 23-: APHABETIZE will sort a list into alphabetical order.
- 24-: APPEND FILE is a demo for appending DOS files.
- 25-: AUTOBOOT 16 is a program to autoboot any 16 sector disk. Uses AUTOBOOT 16.X.
- 26-: BSTAT HOW TO is a guide to finding binary file addresses. BSTAT II is an automated version.
- 27-: DECIMAL POINT is a routine to round-off decimal places in Applesoft programs.
- 28-: DOS COMMAND FINDER REV is an improved version of 3-:
- 29-: DOS SHORT COMMANDS shortens all DOS commands, for lazy typists. Uses DOS SHORT COMMANDS.X. DOS SHORT.RESTORE corrects things.
- 30-: DUMP TRACK AND SECTOR gives hex and ASCII dumps in a different form from that commonly used.
- 31-: EXEC FILE GENERATION helps to generate EXEC files.
- 32-: FREE SECTORS DOS PATCH is a useful item to add to your DOS. It will show the no. of free sectors each time the CATALOG command is used.
- 33-: LIBRARY REVIEW INPUT is the first part of a disk catalog filing system. It reads the disk catalog track and creates a library file similar to 'Multi-Disk Catalog'.
- 34-: LIBRARY INPUT CORRECTOR is used to modify the programs created by the above program.
- 35-: LIBRARY REVIEW displays and sorts files created by the above programs. Uses LIBRARY.X. LIBRARY 1 is a sample file.
- 36-: LITERAL INPUT is a simple routine to allow input of any literal string to an Applesoft program. The data is then stored on disk. LITERAL is a sample text file.
- 37-: LOMEM HIMEM AB displays current decimal values for lOMEM & himem.
- 38-: MEMORY AVAILABLE RAM ONLY will list the memory parameters for RAM based Applesoft. Values are wrong for ROM Applesoft.
- 39-: MEMORY CLEAR clears the free memory area available.
- 40-: MOTOR SPEED will test the speed of your disk drives. MOTOR SPEED.DOC should be run first.
- 41-: NAMES FILE CREATE, NAMES FILE READ and NAMES FILE EXCH are simple introductions to text data files. NAMES is the creating file. Some polishing is needed to the program.

AUG DISK #23

SIDE ONE (+) NOTES:

- 1+: BAGELS 2 is a game of logic for the super-intelligent. Guess the three letter word. (Text)
- 2+: BASEBALL beat the computer's team by matching the random number at each hit. (Text)
- 3+: BINGO CARD generates random cards to use for playing BINGO. (Text)
- 4+: BINGO is basically a number generator for playing the game, using the cards created above. (Lo-res)
- 5+: BOXING win the best of 3 rounds against the computer. (Text)
- 6+: CRYPTOGRAM guess the sentence by decoding the random letters. (Text)
- 7+: GAMES PAK 4 is a set of 4 games:
 1. COUNTRY DRIVER, a lo-res game using paddles to steer a car.
 2. SUB COMMAND, you command a sub, and have to sink the battleship before it sinks you. (Lo-res)
 3. SAUCER WAR, a 2-player game, each trying to destroy the

other. (Lo-res)

4. ADVANCED DRAGON MAZE, you have to escape before the dragon gets you. (Lo-res)
- 8+: PINBALL MARBLE position the marbles correctly and drop them into the cups. (Lo-res)
- 9+: PINBALL hit the targets with the ball to gain points. (Lo-res)
- 10+: SLOT MACHINE LOTTERY buy tickets and win as much money as you can. (Lo-res)
- 11+: CASINO win as much money as you can on the one-armed bandits. (Lo-res)
- 12+: CHASE REAL TIME lure the robots to destruction by hitting each other or the walls. (Lo-res)
- 13+: POKER DRAW 2 beat the computer at poker. Good HGR card displays. Uses POKER DRAW.X.
- 14+: RUSSIAN ROULETTE spin the chamber ten times, then pull the trigger without blowing off your head. (Text)
- 15+: SEA HUNT a game of depth-charge dropping on enemy submarines. (Lo-res)
- 16+: SELL APPLES sell as many apples as you can for the best price. (Text)
- 17+: SHOOTING STARS 4 shoot the stars to revive the black holes. (Lo-res)
- 18+: SLOT MACHINE COLOR win as much as you can by matching all the colours. (Lo-res)
- 19+: TALKING NUMBER GUESS try to guess the number the Apple is thinking of. The Apple will tell you via the speaker if you are high or low. Uses TALKING NUMBER GUESS.X. (Text)
- 20+: THIEF another game for the super-intelligent. Try to guess the thief by examining the suspects and the witnesses. (Text)
- 21+: TOWERS a short version of 'Towers of Hanoi'. You have to move the discs from the first to the third tower, in the right order. (Lo-res)

SIDE TWO (-) NOTES:

This is Eamon Adventure #5, Doom Castle

Note: Disk #19, Eamon Master is required to run this program.

AUG DISK #24

SIDE ONE (+) NOTES:

- 1+: ANTENNA HEIGHT presumably computes the impedance of an aerial against height above ground. Short on instructions and units. Based on an article in '73 Magazine', May, 1980, which may give more details. Takes > 100 minutes for a full run!!
- 2+: ANTENNA PLOT produces a HGR plot of the directional patterns for multi-element antennas. Press <CR> after the beep to go back to text mode.
- 3+: CONDUIT FILL computes the size of conduit required to house a number of cables, using NEC standards. Multiple sized cables can be used.
- 4+: ELCT CALCULATOR II is a mixture of elect. calcs. (Some bugs in program.)
- 5+: ELCT FORMULAS same comments as program 4+.
- 6+: ELCT PAK same comments as 4+.
- 7+: ELCT ZBARS is a series of tests in electronics, based on Zbars text book, which is required for reference.
- 8+: ELECTRIC RATE PLAN computes the cost of electricity for 3 different methods of charging (US system).
- 9+: ELECTRICITY CONSERVATION analyses the consumption of power for various appliances, using San Diego rates.
- 10+: FILTER BAND PASS ACTIVE computes the component values for a filter, based on a '73 Magazine', Sept, 1980, article, which is required for the circuit layout.
- 11+: FILTER HIGH PASS ACTIVE same comments for 10+.
- 12+: FILTER LO PASS LC same comments for 10+ (Butterworth Filter).
- 13+: HAM LOG STATION may be of value to the ham radio fraternity.
- 14+: INTERMOD LOCATOR computes the intermodulation frequencies for any number of input frequencies.
- 15+: L NETWORK DESIGN given the input impedance and the complex load impedance, the program will design a matching L network.
- 16+: LOGIC ANALYSER will analyse a logic circuit constructed from AND, NAND, OR, NOR, XOR, XNOR & INV gates. Limit is 63 gates and 255 nodes. Program includes instructions.
- 17+: LOGIC CIRCUIT ANALYSIS is a tape based version of program 16+, without instructions, but with minor additions, including an iteration limit for unstable circuits.

- 18+: NOISE BRIDGE CALCULATOR calculates real and imaginary parts for aerial impedance and VSWR, given feedline data, frequency and dial readings from 1 of 3 popular noise bridges.
- 19+: OHMS LAW given any two of E, I, R and W, the program computes the others.
- 20+: OHMS LAW FORMULA is a not-so-well thought out version of 19+.
- 21+: π NETWORK DESIGN I given input and output resistances, Q and F, the program will compute C1, C2, L1 and a coil design for L1.
- 22+: π NETWORK DESIGN II achieves the same result as program 21+, but in a different way.
- 23+: POWER SUPPLY AND FILTER is based on a '73 Magazine', Sept, 1980, article. The program computes output voltage and ripple for C and LC filtered outputs, given the secondary RMS voltage, C and load resistance.
- 24+: QSL CARD is a ham radio log and enquiry system.
- 25+: QUAD ANTENNA DESIGN I given centre frequency, this program computes the design values for a 2 element quad antenna.
- 26+: QUAD ANTENNA DESIGN II is similar to program 25+, but has single-band, tri-band, mini and expanded mini quad options.
- 27+: RESISTIVE T PI ATTENUATIONS is based on an article in '73 Magazine', Sept, 1980, and computes the resistor values for T & PI pad attenuators, given the desired input and output impedances, and the desired dB loss.
- 28+: TIMER DESIGN from '73 Magazine', Sept, 1980. Given the frequency, duty cycle and capacitor value, the program computes the resistor values for 555 type IC timers. Alternatively, given the capacitor and resistor values, the on & off periods, duty cycle and frequency will be computed.
- 29+: TRANSISTOR AMP CALCULATOR given Vcc, R1 to R5, and Beta, the program computes circuit currents, voltages, input resistance and gain. The printer is used for output.
- 30+: VSWR FROM POWER from '73 Magazine', Sept, 1980. Given the forward and reverse powers, the program will compute the SWR.

SIDE TWO (-) NOTES:

- 1-: ANGLO(IMP) TO METRIC provides 17 conversions between Imperial and Metric units (both ways).
- 2-: ANGLE CONVERSION converts radians to and from degrees-minutes-seconds.
- 3-: COORDINATE CONVERSION converts polar to and from cartesian co-ordinates.
- 4-: ARCSIN ARCCOS will compute the arc(sin) and arc(cos) in degrees, for a sin/cos value input.
- 5-: SINE FUNCTION produces a HGR plot for sine, cosine and tangent functions.
- 6-: VECTOR ANALYSIS given X, Y, Z for two vectors, the program computes lengths, axis angles and vector angle.
- 7-: VECTOR OPERATIONS given X, Y, Z for two vectors, the program computes A+B, A-B, A.B and A*B.
- 8-: CALCULUS I integrates or differentiates a user entered function.
- 9-: CALCULUS II is similar to the above, but uses Simpson's Rule, and allows for the integration of experimental data (no formula).
- 10-: TRAPEZOIDAL RULE integrates a function between selected limits. The sample function is: $Y = \text{EXP}(X) - 3 \cdot X$. This may be changed as required.
- 11-: DERIVATIVE OF EQUATION given an equation entered at line 30, the program computes the derivative for any X input. A sample equation is provided.
- 12-: DIFFERENTIAL EQN SOLVER will solve ordinary differential equations, using the 4th order Runge-Kutta method.
- 13-: EQUATION SOLVER will solve simultaneous linear equations by either Gauss-Jordan or Gauss-Seidel methods.
- 14-: EQUATIONS I is another program to solve simultaneous linear equations.
- 15-: EQUATIONS II is a set of programs to solve simultaneous equations (9 max), quadratic equations, matrix addition, subtraction, scalar multiplication and matrix multiplication (10×10 max).
- 16-: QUADRATIC FORMULA given coefficients, the program computes the roots, real and/or complex.
- 17-: ROOT FINDER finds function roots, using Newton-Raphson, Interval-Halving, or False Position methods. The example function: $Y = \text{EXP}(X) - 3 \cdot X$, may be changed as required.
- 18-: CURVE FIT I attempts to fit a power curve of the form $Y = A \cdot (X^B)$, and then draws a hi-res plot of the result.
- 19-: CURVE FIT II automatically chooses the best fit of linear, exponential, logarithmic or power curves. The program also offers a hi-res plot, but needs a scaling routine to keep on screen.
- 20-: EXPONENTIAL REGRESSION given the No. and X-Y co-ordinates of the data points, the program computes the coefficients A & B, the coefficients of determination & correlation, and the standard error of estimate. The program also allows interpolation for X.
- 21-: GEOMETRIC REGRESSION operates as for EXPONENTIAL REGRESSION.
- 22-: LINEAR REGRESSION operates as for EXPONENTIAL REGRESSION.
- 23-: MULTIPLE LINEAR REGRESSION is similar to the above, but allows for multiple variables.
- 24-: NTH ORDER REGRESSION given adequate data points and the degree of the equation, the program computes the coefficients, statistical data and allows for interpolation of X.
- 25-: POLYNOMIAL REGRESSION plots data points in lo-res and fits a curve to the points. Other degree plots may superimpose or replace the original.
- 26-: FOURIER TRANSFORM plots Fast Fourier Transformations. A sample 16 point sine function is included.
- 27-: PLOT FUNCTION OF X will plot, in text mode with vertical X-axis, the graph of a function of X, which is entered into line 10 of the program.
- 28-: CURVILINEAR INTERPOLATION given sample data points, the program will compute Y values for X inputs.
- 29-: DFIT is a neat package of curve-fitting routines, offering Linear, Power, Log and Exp options, with auto or manual optimising.
- 30-: LINEAR INTERPOLATION given 2 pairs of X-Y co-ordinates, the program computes Y for any X input.
- 31-: POLYFIT is a neat program to fit a polynomial function to a set of data points. Interpolation is provided. A plot routine was intended, but this uses GRAPH/2 which is not on this disk. Uses TEMP to plot.
- 32-: POWER CURVE FIT (C) is similar to CURVE FIT I.
- 33-: MATRIX INVERSION I will compute the inverse of a square matrix (10×10 max).
- 34-: MATRIX INVERSION II is similar to the above. A singularity test is made.
- 35-: MATRIX OPERATION will perform matrix addition, subtraction and scalar or matrix multiplication, for up to 10×10 size matrices.
- 36-: MATRIX MULTIPLICATION will multiply matrices, for up to 10×10 size.
- 37-: MATRIX OPERATION SIMPLE is similar to 35-, but lacks a multiply facility. 10×10 size limit.
- 38-: TRIANGLE SOLVER computes the 3 unknowns, given SSS, SAS, ASA or AAS. Also computes area, and diameter of inscribed and circumscribed circles. Display needs improving.
- 39-: TRIANGLE PARTS is similar to the above. Better output, but fewer results.
- 40-: RIGHT TRIANGLE SOLVER given two sides, the program computes the third side, and allows scaling for other sizes. Works in feet, inches and 1/16 inch.
- 41-: CIRCLE AREA CIRCUM given the radius, the program computes the area and the circumference.
- 42-: STATISTICS I is a set of routines for permutations, combinations, linear correlation coefficient, linear regression, mean, variance and standard deviation.
- 43-: STATISTICS II given a set of data, the program computes the frequency distribution in absolute, % and histogram form, then displays statistical features.
- 44-: MEAN VARI STDR DEVIA I computes the mean, standard deviation and variance for population or sample methods, using grouped or ungrouped data.
- 45-: MEAN VARI STDR DEVIA II computes the mean, standard deviation and variance for singular or grouped data.
- 46-: UNPAIRED GROUP COMPARISON compares two unpaired data groups, and computes the mean, variance and standard deviation for each group, the mean variance and standard deviation differences and the T ratios.
- 47-: CHI SQUARE TEST performs the Chi-Square test on input data for a selected degree of freedom.
- 48-: F DISTRIBUTION given the F value and the degree of freedom in the numerator and the denominator, the program computes the percentile and tail end values.
- 49-: MANN WHITNEY U TEST given two sample data sets, the program computes the U values for each sample preceeding the other. The second sample must be larger than the first, or the program sulks.
- 50-: NUMBER COMBINATIONS given the number of items, and the subgroup size, the program computes the possible combinations.
- 51-: PERMUTATION COMBINATION I is similar to the above, but also computes permutations, and has an overflow error trap.
- 52-: PERMUTATION COMBINATION II is a more polished version of the above program.
- 53-: POISSON DISTRIBUTION given the test and calculated frequencies, the program computes the probability of the test frequencies occurring.

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- 54-: T DISTRIBUTION given the T value and the degree of freedom, the program computes the right tail value.
- 55-: T DISTRIBUTION TEST having selected from:
- 1: mean = x, or
 - 2: mean = mean & standard deviation = standard deviation, or
 - 3: mean = mean & standard deviation ≠ standard deviation, and, given the data, the program computes the T value and the degree of freedom.
- 56-: MODE FINDER will find the most frequency occurring number in a group, not exceeding 100 elements.
- 5-: THROTTLE is a routine to control the listing speed of program and text files, using paddle 0. Read THROTTLE INSTRUCTIONS for details.
- 6-: HUFFIN is a program to convert Pascal text files to DOS 3.3 text files. Instructions are given in the program.
- 7-: SHORTY CHEF**** and TWEETY**** are picture calendar printing programs. As set up, they are for 1982 only, but CALENDAR**** is a perpetual calendar program which can be easily added to either.

THE REMAINDER ARE BY FERG BRAND:

- 8-: CAT is a utility to aid in searching through several disks for a file. Read TKGP CAT/DESCRIPTION.
- 9-: FERG BRAND UPDATES is for those who already have Disk #22.
- 10-: SAVE SPACELAB and associated files, will simulate, in hi-res, an attempt to rescue Spacelab with the Space Shuttle. SAVE SPACELAB (FAST) is a compiled version, running much faster, but cannot be modified. SSL/DESCRIPTION describes the programs.
- 11-: TOOLKIT TO GRAFPK allows Applesoft toolkit character sets to be used with Grafpak on the Epson.
- 12-: DOS BOOT TUTORIAL illustrates the DOS booting process, using hi-res.

AUG DISK #25

SIDE ONE (+) NOTES:

This is Eamon Adventure #6, Death Star.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

- 1-: BATTLESHIP is a text game, played against the computer. Each player has a Battleship, a Cruiser and two Destroyers. After positioning your ships, you have to sink the Apple's fleet before it sinks yours. When entering co-ordinates, do not enter commas, spaces or <CR> between your numbers, or the program may hang.
- 2-: TITAN is an oil company game for one to four players. There are four levels of skill. Text, lo-res and paddles are used. The winner is the one with the most assets at the end.
- 3-: BOWLING 2 is a simple hi-res bowling alley game, which uses arrow keys to position the bowler. Uses BOWLING.X.
- 4-: GAME PAK 2 is an A.P.P.L.E. selection of four games:
 - a: SINK THE SHIP is a bomb dropping game against the ships, using paddles and the lo-res screen.
 - b: MARBLE DROP Try to land 68 balls in cups, using paddles. Lo-res.
 - c: SHOOTING STARS Try to finish with stars surrounded by a black hole. Lo-res plus keyboard.
 - d: MOUSE Find the hidden mouse in a 10*10 maze.
- 5-: HAMMURABI Try to govern Sumeria for 10 years successfully, despite the plagues, droughts and rats. Text.
- 6-: CHESS MINI a text-screen chess game. Slow, particularly when in check.
- 7-: KENO 2 is a bingo type chess game.
- 8-: GAME PAK 3 is another A.P.P.L.E. selection of four games:
 - a: STARWARS is a lo-res game where you have to get then enemy in your sights. Joystick preferred.
 - b: HEX A PAWN You have 3 white pawns. Enter 7, 8 or 9 for your first move, then <CR>, followed by your destination (4, 5 or 6) (vertical).
 - c: AWARI A bean acquiring game. Enter a number (1 to 6) then <CR> to start.
 - d: TOWER OF HANOI Move your 4 discs from peg 1 to peg 3 in the least moves, without putting a large disc on a smaller one. Lo-res.
- 9-: CONNECTON Try to get 4 of your checkers in a continuous column to beat your opponent. Lo-res, but needs colour to distinguish checkers.
- 10-: PARACHUTE Jump from the plane, pull the chord and land safely on the pad.
- 11-: TREK APPLE 2 is another version of Apple Trek. Text. For instructions read TREK APPLE 2 INSTR.
- 12-: SIMON SAYS Try to duplicate the notes which the computer makes.

AUG DISK #26

SIDE ONE (+) NOTES:

- 1-: DISKVIEW 3.0 will nibble read on any disk, including half-tracks. The instructions are good. No provision is made for modifying data and recopying to disk. Also there are no obvious indications of valid data, other than the presence of absence of a sectoring pattern.
- 2-: APPLESOFT-TOKENISE is described in Applications, Oct, '82, p12-14, under the name "APPLESOFT-EXAM".
NOTE: Delete lines 10 to 40 before using.
- 3-: APPLESOFT-CODES is also from the same article. It will list the codes and addresses, where they reside, and the monitor addresses which are used for each word.
- 4-: MEMORY INTERPRETER is a routine for examining the contents of memory. The start address may be given in decimal or hex, and the following 32 bytes are displayed in decimal, hex and ASCII. Hard copies can be made.

SIDE TWO (-) NOTES:

This side is exclusively dedicated to DIVERSI-DOS, which is a commercial program distributed via user groups and the like. There is no copying charge for this program (this disk is sold as single-sided), but you should take careful note of the screen messages which appear when you boot side 2.

AUG DISK #27

SIDE ONE (+) NOTES:

This is Eamon adventure #7, Devil's Tomb.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

- 1-: STONEVILLE MANOR is an adventure type game where one has to find Mr Stone's safe to win the treasure.
- 2-: COLOUR SPEAKER gives a disco style display on a colour monitor when an audio signal is fed into the Apple's cassette input socket. (NB: Take care when making electrical connections to the Apple.)
- 3-: LIFE (LOMEM:3072 HIMEM:8192) is a better than average simulation of the life process. Exec LIFE EXEC to run the process.
- 4-: MADLIB is a story generating program.
- 5-: OTHELLO is a good rendition of a popular board game, played against the computer. You can select three levels of computer ability.
- 6-: TOWERS OF HANOI SOLVED is the easy way to play the game. From one to fifteen discs can be used. The Apple will then show you how to do it. The speed can be varied, so that you can follow the moves.
- 7-: MEMORY GAME is for any number of players. The computer generates and briefly displays a 3-letter word. The player gains a point if he types in the same word. Each round one extra letter is added to the word, so it becomes harder.
- 8-: SIMON is a computer simulation of the popular electronic game.
- 9-: GAMBLER is a number guessing game for as many players as you wish.
- 10-: SHIP CAPTAIN CREW is a hi-res dice game with an interesting story to add flavour. Uses H-DICE.
- 11-: NJ LOTTERY is a lo-res simulation of a one armed bandit.
- 12-: COMPUTER ART generates pretty pictures on the hi-res screen. A pleasant interlude between hectic games.
- 13-: WINGS (TYPE GR FIRST) is similar to 12-.
- 14-: MUSIC is another form of interlude. You can create your own tunes, or listen to those provided. Type 'RUN' then 'S' to start.
- 15-: SLOTS is a lo-res slot machine game.
- 16-: BLACKJACK is a text version of the card game. Not the best implementation around.
- 17-: BIKE JUMP BW You need imagination to enjoy this text-only version of Evil Knevil's escapades.
- 18-: CHECKERS I is a lo-res draughts game, using paddle 0 to move around the board. Not a very clever opponent.
- 19-: CRAPS II is a good lo-res version of this dice game.
- 20-: FATHOM is a battleship versus submarines game. Uses FATHOM.X.

AUG DISK #28

SIDE ONE (+) NOTES:

- 1+: GRADES is a database program to hold records of student grades in various subjects. FIRST, NFIRST and SFIRST are sample files.
- 2+: CLASS GRADER will monitor and analyse the performance of students. Run CLASS GRADER INITIALIZE before your first run, to set up blank files.
- 3+: CLASS BOY GIRL RATIO gives the percentage of boys and girls in the class.
- 4+: TEST MAKER will produce a hard copy list of up to 95 questions, which are then completed by the students.
- 5+: TEST MAKER MULTI CHOICE is similar to 4+, but generates multi-choice questions.
- 6+: CHINESE NUMERALS displays the Chinese equivalents for integers in the range 1 to 9999, using the hi-res screen.
- 7+: EGYPTIAN NUMERALS is similar to 6+.
- 8+: MAYAN NUMERALS is similar to 6+.
- 9+: ROMAN NUMERALS is similar to 6+.
- 10+: MAGNETIC INK NUMERALS will generate double-sized numbers and math symbols on the hi-res screen.
- 11+: ROMAN NUMBERS is similar to 9+ but lists a range of numbers between 1 to 999.
- 12+: ALPHABET & SOUND is for teaching the alphabet to pre-school children.
- 13+: MATH tests +, -, * and / with three levels of difficulty.
- 14+: MATH MULTIPLY DRILL conducts multiplication tests, using large characters on the lo-res screen. The correct answer is shown after two errors.
- 15+: MATH DRILL I tests +, -, * and / with various levels of difficulty.
- 16+: MATH DRILL II is a timed test of +, -, * and /. An analysis is given at the end.
- 17+: FACTOR is a game which teaches the factors of numbers.
- 18+: FOURTH GRADE DEMO will, amongst other things, add and multiply fractions, and sort words into alphabetical order.
- 19+: APPLE II DEMO is a pleasant introduction to the capabilities of the Apple.
- 20+: TYPING PRACTICE tests your typing skill on any chosen letter group.
- 21+: LETTER DISCRIMINATION will test a student's ability to recognise letters and two or three letter words. Suitable for three to five year olds.
- 22+: SPELL ING is a test for the 'ing' ending to words.
- 23+: TEST IN WOODWORKING relates to a specific project, but may be a source of ideas.
- 24+: PLOT CONSECUTIVE REACTIONS plots the concentration versus time of the three components in a consecutive reaction, in hi-res or lo-res.
- 25+: TIME SPEED DISTANCE EXERCISE Find the time the car takes, given sufficient data.
- 26+: TIME SPEED DISTANCE FUEL computes the unknowns, given sufficient data.
- 27+: MOST COMMON WORDS lists the twelve most common words used in written English.

SIDE TWO (-) NOTES:

- 1-: FAST EQUATIONS tests on solving simple equations for X. Students can select the number of questions, and the time that each question is displayed. This is not an interactive program. The answers are given at the end. Hi-res characters.
- 2-: FAST DIRECTED NUMBERS is similar to 1-:, but tests +, -, * and /. The degree of difficulty can be varied.
- 3-: FAST BASIC OPERATIONS is similar to 2-:, but does not test division.
- 4-: STATISTICS 1 generates random samples within a chosen range, then performs various statistical calculations on the data, to choice.
- 5-: BODMAS is a maths test, typically of the form $12/6 + 5 = ?$. Aid is given when required.
- 6-: SIEVE OF ERATOSTHENES is a good demo of the way the sieve works on prime numbers up to 200.
- 7-: BASES is a neat display of numbers having bases of 2, 5, 8, 10, 12 and 16.
- 8-: DNA is all you ever wished to know about the stuff of life.
- 9-: STEER CONTROL is a mathematical model for steer growth, allowing you to input various parameters affecting growth and studying their effects.
- 10-: BREED enables students to study the genetic effects of breeding through several generations of parents. Hi-res display.

- 11-: POPULATION 2 models population growth with varied data. Hi-res graph plot.
- 12-: ENZYME REACTION RATE allows one to study the effect of pH, temperature and concentration on reaction rate.
- 13-: PARABOLA 1 shows that the tangent to a focal chord intersects at the directrix of a parabola. Hi-res display.
- 14-: PARABOLA 2 shows that a line parallel to the axis of a parabola is reflected through the focus. Hi-res display.
- 15-: TRAJECTORY plots the path of an object subject to gravity, given the inclination and velocity. Hi-res display.
- 16-: MATCH is a game which teaches. New exercises can be added to the given examples, which are SAME1, FRENCH, POLYGONS, MATHS WORDS and TABLES. Uses FILENAME.
- 17-: DIVISION will allow division to any reasonable degree of accuracy. 20 digits worked OK, but the program does not like entries less than 0.1.
- 18-: FAST EQUIVALENT FRACTIONS is a timed test for simplifying fractions. The program is not interactive. The answers are given at the end.
- 19-: VOLUME 1 tests a student in finding the volume of a rectangular prism, which is shown isometrically in hi-res.
- 20-: TITRATE is an acid/base titration simulation, using a pH meter. Good hi-res display.
- 21-: ECONOMICS 1 is a simple economics modelling program, but is short on notes.
- 22-: RADIOACTIVE is a good demo of the concept of 'half-life'. Uses RADIO.
- 23-: PLANT COMPETITION simulates the growth of barley, oats and dwarf or tall peas.
- 24-: PHOTOSYNTHESIS2 simulates a growth experiment, allowing changes in light or carbon dioxide levels.
- 25-: GROWTH calculates the final population of a species which reproduce in an exponential way.

AUG DISK #29

SIDE ONE (+) NOTES:

This is Eamon Adventure #8, Abductor's Quarters.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

- 1-: A NIGHT AT THE CLUB is a good hi-res gambling game, using five types of one-armed bandits:
 - [1] CALYPSO
 - [2] BALLY
 - [3] ARISTOCRAT
 - [4] JUBILEE, and
 - [5] POKER
 CHAIN is used to link programs.
- 2-: ART + TONE is a selection of 10 lo-res dynamic displays, some with sound accompaniment.
- 3-: ART 3D ROTATION is an excellent 3-D hi-res demo of rotating random shapes. It can free run or change a shape when the <SPACEBAR> is pressed. Press <ESC> to end.
- 4-: ART ALPHABET 2 is a large character, lo-res, generating and display program, including a typewriter simulation.
- 5-: ART BIT BIN 2 is a good lo-res display, with spaces in a bin of randomly-placed blocks being filled with falling 'bits'.
- 6-: ART COLOR EATER is a simple, lo-res, checker-board display, with a randomly moving 'colour-eater'.
- 7-: ART CRAZY is a comical little lo-res demo. After running the program, just list it and see!
- 8-: ART CURVES is a pleasant, continually changing, hi-res art display.
- 9-: ART DRAW A FACE Build up a lo-res face in any choice of colours.
- 10-: ART DRAW LETTERS is a demo of lo-res, large character, titling routines.
- 11-: BIRTH/ANNIVERSARY LIST will store up to 150 birthdays or anniversaries, so that you have no excuse in future.
- 12-: BLASTER is a keyboard operated lo-res game, blasting through walls and robots to reach your goal. Good game with 20 skill levels.
- 13-: GRAPHICS LIBRARY is a lo-res graphics display. Press <CR> in response to '?' to continue.
- 14-: HERB'S CALCULATOR is quite a good simulation of a calculator, with large, hi-res characters. Uses HERB'S CALCULATOR DISPLAY.
- 15-: LUNAR ECLIPSE is a hi-res demo of the eclipse of the moon.
- 16-: MICROMUSIC generates, saves to disk, and loads tunes to play on the Apple's speaker. Sample files are: TWINKLE MUSIC, SAINTS MUSIC, THE SAINTS.MUSIC and CAMPDOWN.MUSIC.

- 17-: SUNRISE is a hi-res demo, which needs the Beatles' "Abbey Road" LP to accompany the display.
- 18-: SOLAR ECLIPSE is a hi-res demo of the eclipse of the sun.
- 19-: TUNNEL BLASTER is a variant of 12-, using PDL 0 to select actions. Needs practice to make effective moves.

AUG DISK #30

SIDE ONE (+) NOTES:

- 1+: ADDRESS INDEX.LC is a list of memory locations in the Apple, with brief notes on their use. For details, read ADDRESS INDEX.INSTRUCTIONS.
- 2+: CONVERT APPLEWRITER will change files generated by AppleWriter to DOS text files. TEXT TO APPLEWRITER, which runs TEXT TO APPLEWRITER.X, provides the inverse routine. Note that AppleWriter is required for the EDIT function.
- 3+: CRAE/APA puts CRAE, which is a commercial Applesoft editor, into memory with the DOS Toolkit's APA. Access to CRAE is via the '&' command. Details are given in CRAE/APA.INSTRUCTIONS.
- 4+: DISK SECTOR MAP lists the files on a 16 sector disk, together with data on the files. A map is then drawn, locating all the files on the disk. The program crashes when 'S' files are encountered. Any volunteers?
- 5+: DISPLAY ASC PAGE BY PAGE.OBJ displays the selected memory page on screen, in ASCII characters. Press any key for next page, <RESET> to exit. Read DISPLAY ASC PAGE BY PAGE.INST for details.
- 6+: HELLO is included for the routine which checks the slots for cards. It works fairly well, but fails to find some cards.
- 7+: JOYSTICK.INSTRUCTIONS, JOYSTICK.INFO, JOYSTICK WIRING DIAGRAM and TEXT.JOYSTICK.INFO describe the construction of a joystick for the Apple. The diagram is in hi-res.
- 8+: LC-KILLER.OBJ is a program to convert lower to upper case, in Applesoft programs. LC-KILLER.INSTRUCTIONS gives details.
- 9+: MEMAP (EXEC) will display various parameters relating to an Applesoft program in memory.
- 10+: PADDLE TEST will test the operation of paddles 0 and 1, together with the associated buttons.
- 11+: POKE 33.OBJ uses '&' to set the screen width to aid the editing of Applesoft programs. It is designed to work with DOS Toolkit's APA. Details are given in POKE 33.INSTRUCTIONS. To assist customising, POKE 33.SOURCE and POKE 33.OBJO are included.
- 12+: PRINT USING is a demo program which shows sample 'before and after' outputs. The routine has to be extracted for use in a program.
- 13+: PUF.OBJ (Print Using and Friends) is a Print Using utility for Applesoft programs. It also allows swapping of variables, deleting arrays, repeat printing, clear to end-of-line, and clear to end-of-page routines, all using the '&' vector. Read PUF.INSTRUCTIONS for details. PUF.SOURCE is included for 'modders'.
- 14+: RAM TEST 48K is yet another routine for testing your memory. This one claims to locate the faulty chips, but, since mine was OK at the time, I could not verify this feature.
- 15+: REMOVE STRING SPACES will remove the spaces from an input string, so as to conserve space. A matching program to restore the spaces is not included, but hints are given on a method.
- 16+: SECTOR LIST When given a file name, this program will list data about the file, and find the track/sector list. Deleted files can be found, provided that the name is known.
- 17+: SORT NUMBER WOODRUM will generate a chosen range of random numbers and then sort them into ascending order.
- 18+: TRACK 35.OBJ makes more disk space available by using track 35 and, optionally, DOS track 0 to 2, to give 143 bytes of storage, not counting the catalog track. Read TRACK 35.INSTRUCTIONS for details. TRACK 35.SOURCE and TRACK 35.OBJO are included for customising.
- 19+: UN-NEW.OBJ will recover an Applesoft program which has been accidentally 'NEW'ed. Read UN-NEW.INSTRUCTONS for details. UN-NEW.SOURCE is the source code.

SIDE TWO (-) NOTES:

- 1-: BASIC INTERPRETER SET lists Integer Basic tokens in decimal form.
- 2-: CATALOG TRACK LISTER will, in effect, reproduce the <CATALOG> command. May be useful as the basis of a library system.
- 3-: CHARACTER GENERATOR INSTR starts off a hi-res character generator series. Run CHARACTER GENERATOR PROGRAM, then CHARACTER GENERATOR SAMPLE. If the program appears to hang, press <CR>. To generate your own display, CHARACTER GENERATOR YOURS is provided.

- 4-: COMPARE CAPTURER will convert an Applesoft program into a text file.
- 5-: COMPARE PROGRAMS will identify the differences between two versions of the same Applesoft program. The programs must first be converted to text files, using program 4-.
- 6-: COPY BINARY FILE 1 is a one-drive copy program for binary files, without going through the rigmarole of using FID.
- 7-: COPY BINARY FILE 3 is an improved version of 6- and offers the options of name change and multiple copies.
- 8-: DAN'S SWITCH is a handy routine for re-ordering the titles of a disk catalog.
- 9-: DISK COPY is a single drive copy program, taking 5 passes per disk. Volume numbers must be specified, and different. Blanks must be 'INIT'ed first.
- 10-: DISK PEEKER will display disk data in ASCII and decimal formats, for DOS 3.3 disks, in 64 byte blocks.
- 11-: EDIT ASSM is an editor/assembler package, based on TED. EDIT/ASSM is used. Some instructions are given, but editor instructions are badly needed.
- 12-: EDIT FILE is a text file creating and editing program, with a number of useful features. Instructions are given in program and in EDIT FILE DOC.
- 13-: EDO DOC describes a simple Integer Basic editor, which allows a search for characters of strings. Integer commands must be sought using the hex token. Uses ED1, ED2 and ED3.
- 14-: EXEC FILE CREATE is a utility to aid in creating EXEC files.
- 15-: HIT ANY KEY TO CONTINUE is a simple subroutine to add to an Integer program.
- 16-: KEYIN INSTRUCTIONS gives access to Left square bracket, Backslash and Underscore. Uses KEYIN.
- 17-: NUMERIC CONVERSION is a good program for converting hex to dec, and dec to hex. It also shows you how to do it.
- 18-: PDL SWITCH COLOR TEST is similar to PADDLE TEST on side 1 of this disk, but also test colour output.
- 19-: POKE MACH LANG INTO MEM is a demo of one way to enter machine language into Basic programs.
- 20-: SHORTEN COMMANDS for Integer Basic. Uses control codes for a few common commands.
- 21-: SORT QUICK ALPHA is a demo showing a sort of 100 alpha-numeric words.
- 22-: SORT QUICK NUMBER is similar to 21-, but sorts 150 random numbers.
- 23-: SORT WORDS II will sort any number of words entered at the keyboard.
- 24-: STRING REVERSE FUNCTION is a nice little demo of re-ordering strings.
- 25-: STRING SAVE DEMO is a simple demo of saving and retrieving strings to and from tape.
- 26-: SUPER CATALOG BUILDER is the basis of a disk catalog system. It makes a text file called 'SUPERCAT', which can then be appended to the main library. SUPER CATALOG BUILDER.X is used.
- 27-: SYSTEM CONFIGURATION is a slot search program, similar to HELLO on side 1 of this disk. This one also fails to find the Z80 card.
- 28-: TAPE ARCHIVING FOR DISKS will save and retrieve disk contents to and from tapes. It takes about 20 minutes per disk.
- 29-: TAPE STORE DATA and TAPE RECALL DATA are programs to show how to handle arrays of data on tape.
- 30-: TOKEN ADDRESS TABLE II lists Applesoft commands and token in decimal and then hex formats.
- 31-: TOKEN ADDRESS TABLE III lists Applesoft commands and hex tokens, together with their memory locations, for ROM or RAM based Applesoft.
- 32-: TOM'S DISK MODIFIER is an excellent utility for reading and modifying disk contents. Works with DOS 3.2 or 3.3.

AUG DISK #31

SIDE ONE (+) NOTES:

- 1+: This is Eamon Adventure #9, The Clone Master. Note: Disk #19, Eamon Master is required to run this program.
- 2+: BATTLESTAR is a lo-res game using paddle 0 to guide your Battlestar against the might of the Empire.
- 3+: DRAGON MAZE 3 is a good maze game, where the maze is hidden after generation, and gradually re-appears as you collide with it. You have opposition in the maze, of course!
- 4+: FIZZ BIN is a very absorbing card game for four players, three of the hand being held by the computer. Good text display of cards.
- 5+: GOLF III is a well-presented game using lo-res colour displays for the various holes. Note that angles are measured from the top of the screen.

- 6+: MASTERMIND is another of the "colour-in-sequence" guessing games. Enter colours as five consecutive letters, then press <CR>. The number of markers on the right of the screen gives the correct entries. A white marker means a colour is correctly placed. Get all five white to win!
- 7+: MAZE GENERATOR will generate a random maze for you to solve. To get a hard copy, type <PR#1> and <CR> before running the program.
- 8+: MAZE RACE TIMED is a lo-res maze game with four levels of skill.
- 9+: NAME THAT DATE is an educational game, where one also learns about American history.
- 10+: TIC TAC TOE is a good lo-res version of the game of "Noughts and Crosses", played against the computer.

SIDE TWO (-) NOTES:

- 1-: ALPHA70/DEMO is the easy way to start ALPHA70, which is a 70 column facility, using hi-res screen 1. Read ALPHA70/DESCRIPTION for details.
- 2-: ANYTEXT70 is a routine to read text files, or Applesoft and Binary files as if they were text files. Uses ALPHA70 to display in 70 columns, with upper and lower case. Also uses AT70/BIN.
- 3-: ANYTEXT is a 40 column version of the above program. Uses AT/BIN.
- 4-: BASE CONVERSION CHART I displays hex codes for \$00 to \$FF, with their decimal equivalents.
- 5-: BASE CONVERSION CHART II displays decimal, hex and ASCII codes for \$00 to \$FF.
- 6-: BASE CONVERT JENKINS converts between decimal and binary numbers.
- 7-: BASE CONVERT MASSIMO converts between decimal and hex numbers.
- 8-: BASE CONVERT ** converts between hex, decimal and binary numbers.
- 9-: BINARY TO FP provides a conversion of a binary file to Applesoft data statements, to add to an Applesoft program. "Loadname" is the name of the binary file to be converted. The start address and length can be in decimal or hex, but precede hex by "\$".
- 10-: BLACKBODY Given the temperature and wavelength range, the program computes the power radiation and peak wavelength.
- 11-: CAPTURE A PROGRAM is a routine to save an Applesoft program as a text file.
- 12-: CATALOG PRINTER will output disk catalogs to a printer in slot #1. Provision is included to head each listing with a disk number.
- 13-: CLEAR MEMORY is a clever little program, which clears more memory than is apparent from the listing. It even clears itself.
- 14-: COMPOUND INTEREST TABLES computes six functions relating to interest, accumulation and mortgage problems.
- 15-: COMPRESSION RATIO computes the compression ratio for a given cylinder design. Parameter ranges are given, but these have to be exceeded for an acceptable result.
- 16-: CYCLOID plots, in hi-res, the path of a point of a circle rolling around another fixed circle.
- 17-: DUMP ASCII MEMORY will list memory in ASCII format on the screen, in twenty character lines.
- 18-: ERASE HIRES SCREEN is a simple routine to add to an Applesoft program, to clear the hi-res screen after use.
- 19-: FIBONACCI NUMBERS generates those numbers in the series which fall within the range 0 to 1,000,000,000.
- 20-: FORMAT# is a well documented program showing a method of formatting real number outputs.
- 21-: FUNCTION PLOTTER I will plot a function, entered into line 250, on the hi-res screen.
- 22-: FUNCTION PLOT IA plots a number of functions on the text screen, hence easy printouts can be obtained.
- 23-: FUNCTION PLOT II uses the lo-res screen to plot a function entered into line 5 of the program.
- 24-: GAMBLERS RUIN is a demonstration of how a gambler always loses in the long run. Uses hi-res display.
- 25-: GHOST STORY demonstrates the overlaying of text and hi-res screens.
- 26-: HISTOGRAM generates histograms in horizontal format, for data entered into DATA statements. Uses auto-scaling.
- 27-: HYPERBOLA Given enough data, the program computes the centre location, axis co-ordinates, foci and asymptotes.
- 28-: KEYSPEAK DEMO demonstrates the transferring of audio signals from tape into the Apple. The program provides audio response to number keys. Uses KS/BIN and KS/COUNT. KEYSPEAK ARITHMETIC is a demo of simple arithmetic routines. MAKE KEYSPEAK, RECORD SOUNDS and RS/BIN are files for generating the sound library. RS KS/DESCRIPTION gives details of the programs.

- 29-: LISSAJOUX displays lissajoux patterns on the hi-res screen, for selected ratios of "A" and "B".
- 30-: MATRICES computes the product of two matrices, or the inverse of a matrix, showing the steps involved in each case.
- 31-: METRIC KELVIN TEMP gives conversions between Fahrenheit, Celsius and Kelvin temperatures.
- 32-: METRIC PETROL PRICE will print out a list of petrol costs in cents/litre and cents/imperial gallon, in steps of 0.1 cents/litre, from 33.5 cents/litre to your selected cut-off point.
- 33-: METRIC TEMPERATURE is similar to program 31-, but does not give Kelvin temperatures.
- 34-: ROBOT MOTOR DESIGN Given enough data, the program computes the design parameters of a robot drive motor.
- 35-: ROSETTE is similar to "CYCLOID", but plots a selected size of rosette.
- 36-: SIMULTANEOUS EQN AND MATRIX solves quadratic and simultaneous equations, matrix addition and subtraction, and scalar and matrix multiplication.
- 37-: SPIRAL2 generates different forms of spirals on the hi-res screen.
- 38-: STEP & TRACE gives the ability to use the old monitor ROM routines, to Autostart ROM users. Read ST/INSTRUCTIONS for details.
- 39-: TITLE CENTERING ROUTINE shows a way to centre text in an Integer program.
- 40-: TRY THIS prevents listing a program. The "list" command causes a "run" instead.
- 41-: TRY THIS 1 allows one to call machine language routines from Applesoft, and pass parameters to it. Uses TT1/BIN.
- 42-: TRY THIS 2 allows the full use of DOS commands whilst in the monitor. Uses CALL 151.
- 43-: TRY THIS 3 shows how to enter a machine language routine into an Applesoft REM statement.
- 44-: TRY THIS 4 gives advice on ways to load two binary files, and then run one of them.
- 45-: TRY THIS 5 shows how to move memory blocks when the ranges overlap, and gives a subtle way to clear memory.
- 46-: TYPING VERTICAL is a simple demo of vertical printing to the screen.

AUG DISK #32

GENERAL NOTES: Eamon disks do not have a consistent format, due to their diverse origins. They employ mixtures of random and sequential data files, and allow six or ten directions of movement. If your selected utility fails to work properly, try a similar alternative before despairing.

SIDE ONE (+) NOTES:

- 1+: MENU The options are:
 - A: Initialize a new dungeon disk (2:)
 - B: Edit data files (3:)
 - C: List dungeon file data (4:)
 - D: Read or print a manual (9:)
 - E: Catalog the disk
 - F: Return to BASIC
- 2+: DUNGEON INIT will initialize a new adventure disk and install the BASIC files required.
- 3+: DUNGEON EDIT is a comprehensive program to allow one to edit or add to the data files (rooms, artifacts, effects or monsters).
- 4+: DUNGEON LIST will list, to the screen or printer, the rooms, artifacts, effects or monsters files. The program is for the newer adventures.
- 5+: DUNGEON LIST (OLD) is similar to 4+, but suits the older adventures.
- 6+: FLEX DUNGEON LIST is an alternative to DUNGEON.LIST, but allowing some output choices.
- 7+: BASE PROGRAM 2.0 is the basic Eamon program, which can be modified as desired, and saved with the name of your adventure. This version has six directions of motion.
- 8+: BASE PROGRAM TEN is similar to 7+, but gives 10 directions of motion.
- 9+: PRINT MANUALS is a program to list or print the files DDD MANUAL.TEXT and PLAYERS MANUAL.TEXT, which describes how to generate or play the Eamon adventures.
- 10+: LEADIN PROGRAM is used by some versions of Eamon adventures.

SIDE TWO (-) NOTES:

- 1-: ARTIFACT MAINTENANCE allows one to list, delete and add artifacts.

- 2-: BASEFIX purports to modify the base dungeon program to run faster, have better output format, and more consistent logic. It creates a file called BASEMOD, which is EXEC'ed on the base program.
- 3-: CHANGE EAMON NAME allows one to make changes to the names of adventures (file EAMON.NAME).
- 4-: CHARACTER BUILDER 1 allows one to create new characters in the CHARACTERS file. CHARACTER MAINT and CHARACTER BUILDER 2 are variations of this, but appear to have some bugs.
- 5-: CHARACTER CHANGE/DISPLAY will add, change or display characters in the CHARACTERS file.
- 6-: CHARACTER CLONE will clone existing characters and give them new names.
- 7-: CHARACTERS CREATOR is a simple program to perform the same functions as 4-, but is not as convenient.
- 8-: CHARACTER DISPLAY will sequentially display the CHARACTER file.
- 9-: CHARACTER EDIT allows the deletion of selected characters.
- 10-: CHARACTER ERASE deletes ALL the characters in the file.
- 11-: CHARACTER FILE CONDENSE deletes dead characters, or those which will never return from adventures.
- 12-: CHARACTER MOVER will transfer characters from disk to disk.
- 13-: CHARACTER RESSURECT revitalizes characters in Eamons using THE ADVENTURER. Programs used are CHARACTER REBIRTH and CHARACTER MAINT.
- 14-: CREATE TEXT FILE BOOT creates an EXEC file called FIX BOOT PGM on an Eamon disk. Function not checked.
- 15-: CREATE TEXT SAVE BASE creates an EXEC file called APPEND SAVE BASE on an Eamon disk. Function not checked.
- 16-: CREATE TEXT SAVE GAME creates an EXEC file called APPEND SAVE RTN on an Eamon disk. Function not checked.
- 17-: CREATE TEXT SAVE ORIG creates an EXEC file called APPEND SAVE ORIG on an Eamon disk. Function not checked.
- 18-: DUNGEON AID will list selected data fields for monsters, artifacts and rooms, on the printer.

AUG DISK #33

GENERAL NOTE: Eamon disks do not have a consistent format, due to their diverse origins. They employ mixtures of random and sequential data files, and allow six or ten directions of movement. If your selected utility fails to work properly, try a similar alternative before despairing.

SIDE ONE (+) NOTES:

- 1+: BEGINNERS CAVE--32K is for those with 32k Apples, if any remain.
- 2+: EAMON ADVENTURE LOGS keeps titles of normal and special adventures in files EAMON.ADVLOG and EAMON.SPECLOG. These may be viewed, printed, added to, changed or deleted. A label maker is included for disk labels.
- 3+: EAMON CHECK lists the text in the EAMON.DISC file to the screen.
- 4+: EDIT/CREATE DESCRIPTIONS is used to generate and modify the EAMON.DISC file.
- 5+: ERASE ART EFF MON modifies record #0 to set artifacts, effects and monsters to zero.
- 6+: FIX TENDIR NAME is a small program to correct the name of adventure #19 to "Death Trap".
- 7+: FLEX DUNGEON LIST is the same as that on AUG #32+.
- 8+: LABEL MAKER is a non-Eamon-related utility to print labels on Epsoms.
- 9+: LEADIN PROGRAM is the same as that on AUG #32+.
- 10+: LIST CAVE OF MIND, LIST MINOTAURS LAIR and LIST TREASURE ISLAND are basically the same program, tailored to suit specific adventures. They function like DUNGEON LIST on AUG #32+.
- 11+: QUICKY ROOM PRINT is a variant of 10+; but list to printer only.
- 12+: REMOVE DUMMY ARTIFACTS removes unneeded artifacts from Eamon files.
- 13+: ROOM ANALYSIS list brief data of all the rooms, to the screen or printer.
- 14+: SETUP FOR 32K goes with 1+.
- 15+: SETUP FOR MONSTER/ARTIFACT will create sequential EAMON.MONSTERS and EAMON.ARTIFACTS files for the Beginners Cave.
- 16+: SETUP ROOM NAMES creates a random-access file EAMON.ROOM NAMES for the Beginners Cave.
- 17+: SETUP ROOMS is similar to 16+, but for EAMON.ROOMS.
- 18+: SNAPPY LOAD is, unfortunately, a corrupted file. Any offers for a working version?

- 19+: SNAPPY MAINT 1 and SNAPPY MAINT 2 are two utilities to access and/or modify the SNAPPY file, used by the man at the desk.
- 20+: SPEC DUNGEON LIST and SPEC DUNGEON LIST 2 are almost identical utilities, offering the same features as DUNGEON LIST on AUG #32+.
- 21+: TEST BENCH generates a FRESH MEAT file and runs an adventure for test purposes.
- 22+: VIEW ROOMS1 displays room data in matrix form.
- 23+: VIEW ROOMS2 walks you through the dungeon rooms, showing where the exits occur.

SIDE TWO (-) NOTES:

- 1-: LIST MONSTER.MASTER is a utility to list the names in the MONSTER.MASTER file.
- 2-: MONSTER BATTLE runs a battle royale between any selected monsters.
- 3-: MONSTER INVENTORY will collect monsters from all Eamon disks fed into drive 1, and store them in a MONSTER.MASTER file in drive 2. Use MONSTER INVENTORY VER.0 for adventures which cannot be read by MONSTER INVENTORY. Note that the MONSTER.MASTER file on this disk currently occupies 446 sectors (256 more than shown by DOS).

AUG DISK #34

SIDE ONE (+) NOTES:

- 1+: APPLE COMPUTER TERMINAL is a 300 baud communications package from Ferg Brand for use with the 'No Frills' communications card described in Applications. It uses ACT/BIN and ALPHA70. Files AT70/BIN and ANYTEXT70 are also included. The 70 column files were originally released on AUG disk #31-, but are repeated here to complete the package. ACT MODS FOR CCS 7710 CARD and ACT CCS CARD are for users of this card. ACT/DESCRIPTION gives all the details.
- 2+: SIMPLE TERMINAL is a basic package for use with the 'No Frills' communications card. It uses ST/BIN.
- 3+: ASCII CODE lists the first 96 ASCII codes to screen or printer. It uses ASCII.
- 4+: APPLESOFT TO TEXT will convert an Applesoft file to a text file.
- 5+: TEXT TO APPLESOFT will convert a text file on disk to an Applesoft file in memory. Enough disk space must be available for TEMPFILE, which is later deleted. Options are included for 'PRINT' statements on each line, and for a choice of line numbers.
- 6+: BINARY FILE DISASSEMBLER gives a continuous disassembly of a disk-based binary file. It uses BFD/BIN. File BFD/DESCRIPTION gives details.
- 7+: CASSETTE LABELLER generates smart labels for audio cassettes. Details are given in CASSETTE INST. Sample files are CASS GLEN MILLER, CASS DEMO 1 and CASS DEMO 2. The program is set up for a Dan Paymar chip and an Epson printer.
- 8+: C.ITOH F10-40 EXEC LISTER is EXEC'ed on to the end of an Applesoft program so as to print a listing with left-margin and fan-fold skip over on the C.Itoh printer. Line numbers start at 63000.
- 9+: COMMENTER makes it easy to add comments to a DOS catalog listing.
- 10+: COPY SOME allows a normal copy program such as FID or COPYA to ignore checksums and epilogos on disks where these have been altered.
- 11+: FILE CABINET V is the latest version of this 'oldie'. Wayne Short has debugged and improved this reliable database. This copy includes an address file setup, and uses BASENAMEFILE and a group of five ADDRESS..... files.
- 12+: HUFFIN will convert a Pascal text file into a DOS text file.
- 13+: JOYSTICK TESTER is a neat utility to test your paddles and joysticks.
- 14+: MAGNIFYING GLASS simulates a view of a 70 column hi-res text display as seen through a magnifying glass. It uses MG/DISPLAY, MG/BIN and, presumably, ALPHA70.
- 15+: SWEEP is a hi-res display demo. It uses SWEEP/BIN and SWEEP/PIC.
- 16+: UPDATES is for those who already have AUG disk #31. It corrects some minor errors in the 70 column display utilities.
- 17+: WORD GRINDER is a well documented but fairly basic word processor. Instructions are given in HOW TO OPERATE WORD GRINDER.

SIDE TWO (-) NOTES:

A DATA BASE MGMT PGM (C) is an excellent data base for public domain use. The original program has been debugged and enhanced by Wayne

Short, and now works well. It supports two disk drives, an 80 column card and most printers. Since it is Applesoft based, it suffers from garbage collection delays. Good instructions are given in HELP. Other files used are CREATE.ADD, CURRENTFILE, EDIT.FILE, MERGE, SEARCH.SORT and TRANS.COPY. CONSTAR is a sample data base. Run the header program or HELP to get started. Note that this program is copyright, but cleared for public domain use. It must not be used, in whole or in part, for any commercial purpose.

AUG DISK #35

SIDE ONE (+) NOTES:

- 1+: ULTIMA][CHARACTER EDITOR allows Ultima][owners to modify their character attributes (cheats). Read ULTIMA][C.E. INSTRUCTIONS for details.
- 2+: WIZARDRY CHARACTER EDITOR performs the same function as above for Wizardry owners. Read WIZARDRY INSTRUCTIONS for details on how to cheat at this game.
- 3+: KOALA PAD MENU PROGRAM allows the Koala Pad, or paddles, to select a program from the disk catalog, and was listed in December, 1983, Applications. BASIC KOALA PAD MENU PROGRAM is an alternative Applesoft version which did not work on my Apple, so it may require a Koala Pad to be installed.
- 4+: CONTRIBUTIONS lists the magazine date for each of the following three programs:
- 5+: REVELATION ROUTINE is for use with David-DOS, and is described in November, 1983 Applications.
- 6+: HI-RES MAGIC is a collection of routines to control both the hi-res screens from BASIC. See Applications, September, 1983 for details.
- 7+: SECOND TEXT PAGE is a utility to make use of the second text page from BASIC. See Applications, June, 1983 for details.
- 8+: PULSAR-INTRO is the entry program to the following dynamic and interesting hi-res art displays:
BPULSAR1
BPULSAR2
BPULSAR3
BPULSAR4
BPULSAR5
BPULSAR6
BPULSAR7
BPULSAR8
- 9+: MIDWAY is a game where one tries to bomb an aircraft carrier during the Battle of Midway, using 5 fighters against the carrier's AA guns. Lo-res game, with paddles.
- 10+: PING PONG 2 PLAYER 1 is a two player game of ping pong, where the first player to reach a score of 15 is the winner. Lo-res game with paddles.
- 11+: TANKS is a lo-res game for two players, using paddles. Each tries to shell the other, whilst avoiding obstacles and beating the time limit.

SIDE TWO (-) NOTES:

- 1-: AUG DISK #35- is the intro to four excellent pinball games, created with Bill Budge's Pinball Construction Set. This was reviewed in Applications, October, 1983. The games are:
- FLIP IT
- MAXX'S MADNESS
- SUPER BLAST
- THE MAXX MACHINE
- 2-: QLOADER is a utility to speed up the loading of binary files, and is used for the above pinball games.

AUG DISK #36

SIDE ONE (+) NOTES:

- 1+: BASICALC is an excellent spreadsheet program, courtesy of the IAC. It works on Visicalc lines, and can handle 10 columns by 69 rows. Four function maths is available, and bar type graphs are included. Each column width can be varied. BASICALC.DOC gives details, and BASICALC SAMPLE DATA is self-explanatory. A compiled version, BASICALC.COMPILED, will run faster, but cannot be enhanced to suit your needs.
- 2+: BOOLEAN LOGIC EXAMPLE is a Visicalc template which shows a way to utilise Boolean logic.
- 3+: CHEQUE BOOK is a Visicalc template to handle cheque accounts.
- 4+: COMMISSION SALES EXAMPLE is a Visicalc template to handle sales commission, where the rate of commission varies with the quantity.

- 5+: IF MODEL EXAMPLE is a Visicalc template to show how an 'IF' statement can be implemented.
- 6+: INDIVIDUAL EXPNS REPORT FORMAT is a Visicalc template for computing business expenses. The dates are for 1983 but can easily be changed.
- 7+: INDIVIDUALS EXPENSE SUMMARY gives a summary of the expenses from program 6+.
- 8+: VISICALC FILE CHECKER is a utility to list or print the contents of each cell of a template. It is useful for recording and/or checking formulae. The output is printed back to front.
- 9+: VISILIST is a simpler version of 8+, and prints back to front.
- 10+: REGRESSION.VC is a Visicalc template, courtesy of Washington Apple Pie, to demonstrate the use of Visicalc to perform regression analysis. BRUN REGRESSION.DOC to learn more on this topic.

SIDE TWO (-) NOTES

- 1-: FED TAX 1982.VC is a Visicalc template, courtesy of Washington Apple Pie, to calculate US Federal taxes for 1982. Whilst not directly relevant to Australia, it may be a useful source of ideas.
- 2-: GENERAL LEDGER MANUAL describes an accounts package which was supplied by courtesy of San Francisco Apple Core. The manual was published in Cider Press magazine, October, 1981. The programs are: BOOT, APPLESORT, LDENT, LDREP, LDLIST, LEDGER BITMAP MASTER and LEDGER. Further packages will be published on future club disks.
- 3-: APPLE FILE (C) is a form of card index file, for up to 60 cards, each containing one screen of data. Cards are stored in binary files, and nine sample files are included. These describe the Matrix Maker program (4-). Data for the cards is kept in INDEX. The hard copy routines need work, but the program otherwise works OK.
- 4-: MATRIX MAKER is a form of balance sheet, with up to 52 columns by 52 rows of figures, which are summed by row and column. Instructions are given in CARD1 to CARD9 (see 3-), and are automatically displayed when the program is first run. MM-TEST is a sample matrix.
- 5-: TITLE SLIDES is a routine to display the cards generated by 3- in order, preceded by a selected title page.
- 6-: CHECK BOOK BALANCE is a suitable program for tracking domestic bank accounts. It supports a normal printer via slot 1, and a TI743 printer driven via a communications card. The driver for this is in CHECK BOOK.X. Read CHECK BOOK INSTR for details.
- 7-: FAMILY FINANCE (C) allows one to plan a budget for the year, under a number of preset headings. There is no printer facility. The data file is stored as BUDGET FILE.YEAR, where 'YEAR' is '1984' or similar.

AUG DISK #37

SIDE ONE (+) NOTES:

This is Eamon adventure #10, The Magic Kingdom.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

This is Eamon adventure #11, The Tomb of Molinar.
Note: Disk #19, Eamon Master is required to run this program.

AUG DISK #38

SIDE ONE (+) NOTES:

- 1+: ED'S PLOT PACKAGE is the instruction file for a very comprehensive and complex data processing and plotting package, originally developed for work in the communications and echo-location field. Hi-res screen and printer graphics are included. Major features are: auto-scaling, fast Fourier transforms, windowing of selected data, superimposed plots, labels, auto/cross correlation, root computation, low-pass and non-linear filters, etc, etc. The system files occupy 475 sectors of side 2 of this disk. Need I say more!!
- 2+: GREETINGS PART2 is the startup file for an editor program from Joseph Sweeny, for the SAM voice card. The EDITOR assists in the preparation of better phonetic representations of speech. The COMPRESSOR converts SAM text files to Applesoft. Sample SAM text files are NATIONAL ANTHEM and RAIN. The COMPRESSOR'ed versions end with .PROG. INTRODUCTION.PROG is an example Applesoft program to use the SAM card. Read INSTRUCTIONS.
- 3+: RESTORE ROUTINE will catalog deleted files in inverse, and will restore these files. The problem is that it requires track and sector

information for the deleted file before it will restore it. The program offers no help in locating this data.

- 4+: BINARY FILE COPIER allows you to copy binary files from disk to disk or tape, without knowledge of machine code. Taken from the magazine 'Practical Computing', August, 1980.
- 5+: SHAPE DESIGNER is the start of a set of hi-res shape utilities, taken from 'Apple Orchard' VI, #1. The programs are: SHAPE-DES ASSEMBLER, SHAPE-PROG and SHAPER.
- 6+: AUTOAPPLESOFT is from 'Call Apple', Mar/Apr, 1980, and gives you the ability to auto-number Applesoft program lines. The line increment is fixed at 10.
- 7+: MINI ASSEMBLER offers access to the Mini-Assembler utilities, for those with Autostart ROM's, and no language card.
- 8+: SEARCH/CHANGE is taken from 'Micro' magazine, Jan, 1980, and is appended to your Applesoft program. It then allows you to find alphanumeric data in your program. The search is fairly slow, but is well done. Problems occur with reserved words.
- 9+: EDIT+ was first intended for Integer and ITT Apples, but adds two useful commands to the Autostart edit: 'copy a whole line' and 'set text window'. Read EDIT+/INSTRUCTIONS for details.
- 10+: FPEDIT+ is a variant of EDIT+, and offers: 'copy to end of line', 'toggle text window' between 33 and 40 columns, and allows paddle 0 to vary the listing speed. Read FPEDIT+ INFO for details.
- 11+: CATALOGUE is a good catalog program for standard DOS disks.
- 12+: ALPHACAT will sort a DOS catalog into alphabetical order. It does not check the write-protect status of the disk, however.
- 13+: HELLO.TYPCORR bruns TYPING CORRECTOR, which is a utility to correct your typing errors in 'immediate' commands. Provision is included to add or delete names from the list of commands.

AUG DISK #APPLEFEST 1982

SIDE ONE (+) NOTES:

- 1+: HELLO is the AUG logo program. It runs MENU at the end.
- 2+: MENU is a text file reader, which uses CAT, TEXT READER and DISK PROGRAM COMMENTS. The latter file has details of the program on the disk.
- 3+: LANG is used to load INTEGER LANGUAGE, which is required for some games on this disk. (NOT for users with language cards.)
- 4+: GAMES MENU is the intro to the following games:
 - SHOOTING ALIEN
 - AIR FORCE BOMBER
 - ASTEROYDER
 - LUNAR LANDER
 - NEW FLY KILLER
 - BLACKJACK
 - RATS! A 3-D MAZE PERSPECTIVE
- 5+: SHOOTING ALIEN is a difficult hi-res graphics game, using paddle 0, where one has to shoot down aliens before they clobber you.
- 6+: AIR FORCE BOMBER is another hi-res game, using paddle 0 to control a bomber, with PBO to time the bomb drops. Constantly changing height adds to the skill requirement.
- 7+: ASTEROYDER is similar to SHOOTING ALIEN.
- 8+: LUNAR LANDER is a hi-res version of this popular game. Paddles can be used but a joystick is better.
- 9+: NEW FLY KILLER is a hi-res game where one has to kill flies using an insecticide spray. Requires a joystick for best results.
- 10+: BLACKJACK is a hi-res card game. The logic is not always perfect.
- 11+: RATS! A 3-D MAZE PERSPECTIVE is an excellent 3-D maze game in hi-res. No paddles required. Uses RATS! BINARY.
- 12+: TOLLBOOTH - THE BITS WINNER is an excellent hi-res game which won the Liverpool region maths assn programming competition. The object is to guess the car registration number before it escapes without paying a toll. Uses TOLLSCENE and TOLLSHAPES.
- 13+: ALIEN HEART is a hi-res graphics demo.
- 14+: ONE LINE is a hi-res demo, showing what can be achieved in one line of Applesoft.
- 15+: WORMS is a game for two players, where each one has to strike the other's "worm" first.
- 16+: AWARI is an ancient African strategy game for two players. Keyboard only.

SIDE TWO (-) NOTES:

- 1-: MENU WRITER is a program to generate disk menus, such as the HELLO program on this disk. A text file called CAT is created in the process.
- 2-: FILE CABINET 2.1 is a useful database for home use. It can handle about 200 records, depending on the record length chosen. Copy the

program onto a blank disk first, otherwise you may have problems since files are generated for storage of data.

- 3-: MAS.CAT.48K is a good utility for storing details of your programs. You can allocate volume numbers to disks as required, and a fast sort routine is included, allowing sorts by name, type or volume number. It can hold about 1200 programs per file, which is better than MULTI-DISK CATALOG III. Patience is necessary at all times, whilst garbage collection takes place. This version has been modified by various enthusiasts since its inception, but it lacks a memory limit, so beware when every disk loaded takes longer than normal. Save your file regularly if you wish to push it to the limit. The program only works with 16 sector DOS 3.3 disks. The printer output needs improvement, but otherwise this is an excellent program. Uses B.MAS.CAT.48K.
- 4-: CASH FLOW MANAGEMENT is a cheque book balancing and individual transaction processing program. It has 7 sections:
 - i) current cash flow status
 - ii) update cash flow with new entries
 - iii) updated cash flow status
 - iv) verify cash flow against cheque balance changes
 - v) examine individual transactions
 - vi) compare cash flow to date with budget
 - vii) show proportion of budget used to date, compared to annual proportion.
 This program should be transferred to a blank disk before use, since it creates 31 work files. Uses CASH FLOW FILE.
- 5-: DOS FILE TUTORIAL is a useful intro to sequential and random access text files.
- 6-: MEMMAP48K is 'EXEC'ed after loading or running an Applesoft program. It will produce a lo-res display showing the memory partitioning used, followed by listings of addresses and lengths used. Run MEMORY MAP INSTR for details.
- 7-: SOUND DEMO uses paddle 0 to demonstrate sound effects to add to your programs. Details are given on how to include this in your listings.
- 8-: ADD AMPERSORT TO FC 2.1 is a file which is "EXEC"ed onto FILE CABINET 2.1 to utilise Ampersort (a commercial program not on this disk).
- 9-: GARBAGE HELP is the intro to a series of files relating to a faster garbage collection routine than that provided by Applesoft. RUN B.GARBAGE (ORG \$9400) is an Applesoft program which merely "BRUN"s B.GARBAGE (ORG \$9400). The source file is S.GARBAGE COLLECTOR. A test file, TEST GARBAGE COLLECTOR, lacks explanation.
- 10-: CATALOG MANAGEMENT is a utility to give notes on each program in a disk catalog. A text file called PROG.LIST is created first, using CATALOG MANAGEMENT - EDIT.
- 11-: EXTRA SPACE is a utility to open up space between DOS and the DOS buffers in memory.
- 12-: FORTRAN INTERPRETER is not what the name suggests. It is an interesting form of Reverse Polish notation calculator, allowing the used of variables and constants, which can be changed between calculations.
- 13-: KLEM'S DISASSEMBLER is a useful utility to print a continuous disassembly of memory between two defined points.
- 14-: POORBOY'S PLE is an Integer and Applesoft programming utility, having 10 functions, including list control, line length and last BLOAD address length. Uses POORBOY'S PLE..
- 15-: PRETTYLIST is a utility to provide a clearer screen format of Applesoft program listings. It also includes a useful stop/start list control. PRETTYLIST INFO describes the program.
- 16-: S-C SCREEN EDIT is a utility to perform screen editing. Results can be stored as simple text files, or as line numbered text files, which can be "EXEC"ed onto your Applesoft program. Uses B.SCREEN.EDIT.SUBS. The source file for this is S.SCREEN.EDIT.SUBS.
- 17-: CREATIVITY TEST is a condensed version of the 310 questions devised by Princeton Creative Research, and which determines your ability to handle difficult situations.
- 18-: JON 1.0 - A PROGRAM THAT LEARNS is an excellent game of NIM. With each game, the computer becomes more efficient. After 25 runs it is a perfect player. Uses JONFILE.

AUG DISK #PC85

SIDE ONE (+) NOTES:

- 1+: ALPHANUMERICS is a display program, allowing Apple][+ users, without lower case, to use the hi-res screen to show lower case letters. CHARACTER CODE is an associated program to generate your own fonts.

- 2+: ART DRAW LETTERS is a demo of a title routine to suit a home video or movie fan. The program generates large letters in lo-res graphics.
- 3+: CAPE 'CANAPPLE' is a Physics test game, where you have to select a height and velocity required to remain in orbit around the Earth.
- 4+: DEFENSE SQUAD LEADER is a crafty text game of shootouts. It uses keys I & M to manoeuvre, and the space bar shoots.
- 5+: DICE is designed for Dungeons & Dragons use, and allows for 2, 4, 6, 8, 10, 12, 20 and 100 sided dice. You can select the number of times rolled, and the sum of the numbers is optionally computed.
- 6+: DISK COMMAND EDITOR allows you to change DOS in memory, to show your own catalog headings, and to modify the normal codes for file types, as well as the locked and unlocked symbols. The DOS commands can also be listed or printed.
- 7+: MISTER MATH 3 is an excellent maths trainer. It tests for +, -, * and /, and offers 3 levels of difficulty. It presents a nice lo-res display, well suited to the younger generation.
- 8+: RECIPE FILE X is an excellent program for storing and recalling recipes for various dishes, under nine headings:
 - Meat
 - Casseroles
 - Salads
 - Breads
 - Desserts
 - Miscellaneous
 - Vegetables
 - Snacks, and
 - Drinks
- 9+: SCREEN 2 is a curious program to make use of text screen 2. It works with AppleWriter, which I do not have, so it is not fully tested. Since the display was odd on my machine, I assume that it does not like a lower case chip being present. Programs SCREEN2 INTRO, TEXT.PAGE 4 and B-1 to B-5 are used.
- 10+: SOFTWARES is a program showing you how to make music through your speaker. The sample tune is, of course, Star Wars.
- 11+: SPELLING BEE III is a well-presented spelling program, allowing the creation and recall of text files holding up to 100 words, which are flashed briefly on the screen. Uses SPELLFILE - OFTEN MISPELLED.
- 12+: STOP III is a test of your reaction time, when driving at speeds up to 127 mph. Your reaction time and stopping distance, under varying road conditions, are computed and displayed. Uses Paddle 0.
- 13+: SUPERDRAW is a semi-professional graphics package, offering many capabilities to aid the production of hi-res colour displays. File DRAWINSTRUCT contains instructions, and should be run first. HEADER is used. The program makes good use of the paddles, and can employ shape tables and text entries. MYSHAPES is a sample shape table.

SIDE TWO (-) NOTES:

- 1-: ART IMPOSSIBLE is a hi-res picture of a structure which would be rather difficult to build in three dimensions.
- 2-: ART MODERN PAINTING is a dynamic hi-res 'Modern Art' demo, offering several optional parameter changes.
- 3-: ART MULTICOLOR 1 is a dynamic, kaleidoscopic, hi-res display.
- 4-: ART PACIFIER is a hi-res display of symmetrical pattern drawing.
- 5-: BASE CONVERT BEYMER is a means of converting numbers between any two bases, for 2 to 16. It does not like converting zero, however.
- 6-: BASIC -> MONITOR is a short routine to allow the use of monitor commands from Integer BASIC. The intent is for you to add the bones of a program to your own.
- 7-: CRAPS I is a fairly good lo-res version of this dice game, where you play against the computer.
- 8-: HANGMAN II is another version of this old game. This one uses lo-res graphics to build up the picture.
- 9-: HIRES DEMO gives 4 graphic demos: Kaleidoscope, Circles, 3D Surface and Epicycloids. The program is well presented.
- 10-: PENTOMINO is a lo-res colour jigsaw puzzle, where you define the X and Y dimensions of a rectangle (X*Y = 60). The computer then tries to fill the box with a selection of shapes, so as to have no spaces left. Needs patience.
- 11-: PLANET LOCATOR is an excellent hi-res dynamic display of the rotations of the planets Mercury, Venus, Earth, Mars, Jupiter and Saturn around the Sun. The start date and increments can be set and changed at will. Uses PLANET LOCATOR.X and PLANET LOCATOR.Y.
- 12-: RESISTOR COLOR CODE DECODER will compute the value and tolerance of a resistor, given the four colours.
- 13-: RESISTOR COLOR CODE QUIZ tests your knowledge by giving you the colours of ten resistors for you to guess the values of.

- 14-: REVERSE NUMBERS is a neat little game in which you have to sort a random list of nine numbers into ascending order.
- 15-: SAIL PLANE LANDER is a difficult text screen game for non-fliers. The object is to land one of four types of gliders safely on the runway. Your control panel feeds you with essential data. Paddle 0 is used to control the elevators and spoilers.
- 16-: SHOOTING STARS 3 is the same lo-res game as SHOOTING STARS 4 on AUG Disk #23+, but this one is better because the squares are numbered. The object is to end up with stars around the 3*3 box, and the black hole in the middle.
- 17-: STRING CONCATENATION is a rather simple string handling program in Integer Basic. It may serve as a source of ideas for programming, but is of no use in itself.
- 18-: TEXT TOKEN FIND will locate and list all lines in an Integer Basic program containing the chosen text string, or Basic token. It does not, however, provide a list of tokens. It appends itself to your program, which must not have a line number > 32761. Uses TEXT TOKEN FIND.X.
- 19-: THE COPIER is a 3-pass copier for standard DOS, Pascal, CP/M and ProDOS disks. It was described in Applications, November, 1984. THE COPIER.DOC and COP.DOC.MOD are Sandy's text files, which include the source code to suit the Big Mac assembler.
- 20-: WORD BOUNCING is a simple but clever 3 part display of text and lo-res graphics. A box of eight entered words is made to contract and expand before your very eyes, in the text part of the display.
- 21-: HAUNTED CAVE is an adventure game which is fairly good, but the instructions are an adventure in themselves. It is an improved version of SPELUNKING, on AUG disk #5+6+7+8.
- 22-: APPLE INVADER is by Mark Pelczarski, and is taken from Softside magazine. It is an excellent hi-res paddle game, with ten levels of difficulty.
- 23-: SPACE MAZE is based on the program in Nibble magazine, and is a difficult hi-res joystick game. The object is to navigate the maze and reach the Dilithium crystals.

AUG DISK #39

SIDE ONE (+) NOTES:

This side contains an educational game called Ironmaster, a simulation of the early industrial revolution in England, focusing on the change in methods of iron production. The program has been written under ProDOS and should work on any // from 64k,][+ through to //c machines (including a forty column Apple //e).

SIDE TWO (-) NOTES:

Side two has a program distributed under the Shareware scheme from Diversi-DOS. There are two programs: a Mass Disk Copier, for those with more than 128k of RAM, and allows you to read a whole disk into memory and produce multiple copies, and Dogfight, an arcade game with the facility to have multiple players and to design your own setups.

AUG DISK #40

SIDE ONE (+) NOTES:

Side one contains Fact Track (by courtesy of S.R.A.). It provides timed practice with arithmetic facts and related skills.

SIDE TWO (-) NOTES:

Side two has Beano (also courtesy of S.R.A.). It is a number game that develops mental computation and strategy. Complex sums are used to answer the questions which are needed to fill a checkerboard with beans. (It is reviewed in the June, '85 issue of Applications.)

AUG DISK #41

SIDE ONE (+) NOTES:

This is Eamon Adventure #12, The Quest for Trezore.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

This is Eamon Adventure #13, Treasure Island.
Note: Disk #19, Eamon Master is required to run this program.

AUG DISK#42

SIDE ONE (+) NOTES:

This is Eamon Adventure #14, Furioso.
Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

This is Eamon Adventure #15, Heroes Castle.
Note: Disk #19, Eamon Master is required to run this program.

AUG DISK #43

SIDE ONE (+) NOTES:

Contains the series Micros Made Easy, courtesy of S.R.A. It is an introduction to micro-computers for the absolute beginner. Included are lessons on Parts of the Computer Hardware, Keyboarding and BASIC.

SIDE TWO (-) NOTES:

Contains Computer Drill & Instruction - Maths Level D. It is a series of 16 programs covering numbers, fractions, decimals, multiplication, etc. Supplied courtesy of S.R.A. Help is provided.

AUG DISK #44

SIDE ONE (+) NOTES:

- 1+: ACCOUNTS RECEIVABLE is a set of programs that demonstrate a financial accounts receivable system. Details are included and examples are provided by Hans Hoffman.
- 2+: SNAKE is a game where a snake moves around the screen eating blank squares while trying to avoid walls and other obstacles. Complete instructions are included.
- 3+: UTILITY PROGRAMS is a set of six programs:
 - (i) ASCII Screen Display
 - (ii) Graphing Functions in Hi-Res
 - (iii) Ampersand List Utility
 - (iv) Ampersand Run Utility
 - (v) Ampersand Kill-Catalog Utility, and
 - (vi) Twirling Cursor.

SIDE TWO (-) NOTES:

This side is completely devoted to a game of Trivial Pursuit. It is run under the ProDOS operating system, which must be loaded first. Run Startup to begin. The program is menu driven and facilities are included to add your own questions and answers at any time. Further data disks can also be obtained.

AUG DISK #45

SIDE ONE (+) NOTES:

This is Eamon Adventure #101, Harrogate Hotel. It is the first of a new series and has a large vocabulary and the ability to understand full English sentences. Rumour has it that the hotel is haunted, and that cheating program listers will be cursed.

Note: Disk #19, Eamon Master is required to run this program.

SIDE TWO (-) NOTES:

AppleWriter //e Utilities. Enhancements to your Applewriter //e disk (DOS 3.3 Version). It adds to and improves functions of the word processor; Copy multiple files, Delete Useless files, Convert files, Count the words/characters in a text file, Print a document outline, and many more. This is an AppleWriter //e text disk and the AW2E master disk must be run first.

AUG DISK #46

SIDE ONE (+) NOTES:

- 1+: DEFENDER is a hi-res game for an Apple with 64k RAM, and Apple][+ with 16k RAM card, and Apple //e or //c with a joystick. The object of Defender is to rescue men from attacking aliens before they are captured and turned into mutants.
- 2+: DEMOS is a series of graphic demonstrations, including:

Explode
Lines
Bouncing Balls
Qix Lines, and
Gun Sight
Each is documented.

SIDE TWO (-) NOTES:

BINARY LINKING UTILITY allows a user to link and use a number of machine language, or ampersand (&), routines. They can be used from an Applesoft program by CALLing, or BRUNing. Libraries can be made on disk. Demonstration programs are included on this disk. Complete instructions are given.

AUG DISK #47

SIDE ONE (+) NOTES:

- 1+: FLIP IT
MAXX'S MADNESS
SUPER BLAST
THE MAXX MACHINE
Four pinball games created with BUDGECO's Pinball Construction Set. Paddle buttons operate the flippers. If you have an Apple //e, you can use the OPEN-APPLE and CLOSED-APPLE keys instead of the paddles. Games can be played by one to four players.
- 2+: QLOADER is a program for faster BLOADing of binary files.

SIDE TWO (-) NOTES:

- 1-: FOUR-IN-A-ROW is a version of Connect Four. Involves the dropping of checkers in one of seven piles until one player has obtained a sequence of four checkers in a row. A two player game.
- 2-: GOAL GAME is playable against the computer in which each player attempts to make the final move to reach a particular square.
- 3-: MINER directs the miner in digging for gold in a mine, uses elevators and various economic measures of success.
- 4-: MOONLANDING you attempt to land your spaceship on a space of a size you have designated. Requires joystick or paddles.
- 5-: ASTEROIDS is an arcade style game in which you shoot asteroids before they crash into you.
- 6-: DEFLECTO requires you to hit a target by deflecting a ball across the screen.
- 7-: NO MAN'S LAND is a lo-res game. The object is to run robots into landmines before they get you.
- 8-: QUBIC is a cubic version of tic-tac-toe.
- 9-: SPACE CANYON you steer a spaceship down a canyon without hitting the walls. Requires paddles.
- 10-: DUNKING MACHINE you use paddles to control a blinking "sight". Hit the target and the "victim" falls into the pool of water. Just like the carnival game. Depends more on lucky timing rather than skill and paddle control.
- 11-: PLANET OF THE ROBOTS is a text adventure - you against computers and robots. Abbreviated direction commands. You can save any number of games so the whole family can play by using their number.
- 12-: SIMPLE SIMON is a recreation of the game SIMON. The computer plays a sequence of notes. You must repeat it exactly. Three levels of difficulty and up to 8 notes in a sequence.
- 13-: KENO is a text KENO game for up to 10 players. Each player selects the amount of bet and the numbers to bet on. The computer randomly selects winning numbers and gives results of betting for each player.
- 14-: COWS & BULLS a deductive reasoning game for up to 10 players. Computer picks random 4 digit number and you must guess the number. Clues are given as to how good your guess was.
- 15-: RADAR DEFENSE a hi-res view of a radar screen. You enter direction and distance to destroy approaching enemy crafts and try to save your base.
- 16-: KENO PROG is a single player version of 13-.
- 17-: ABM is an arcade missile game in hi-res. Use paddles to control "sight". The joystick is reversed and difficult to use.
- 18-: YAHTZEE is a two player computer version of the game of Yahtzee. It is all text and the game keeps score for you.
- 19-: DICTIONARY GAME at least two players are needed. The computer selects a random word from your dictionary by specifying a page number and distance from corner. Players try to give definitions.
- 20-: SCRABBLE HELP, you type in your letters and the computer prints all combinations of those letters on the screen. You then

choose a word from the list. Pressing <CR> gives you more words until you run out of combinations.

AUG DISK #48

SIDE ONE (+) NOTES:

1+: ARCADE PINBALL META-PIN MINUTE MAGIC

Three pinball games created with the Pinball Construction Set. Paddle buttons operate the flippers or you can use the Open-Apple and Closed-Apple keys.

SIDE TWO (-) NOTES:

1-: TOMB OF DOOM REVENGEFUL RABBIT BEE CRUNCH

Three more arcade games created with the Arcade Machine. They require a joystick or paddle to play.

AUG DISK #49

SIDE ONE (+) NOTES:

- 1+: BATTLEFIELD, each player has 40 squares on an 8*10 battlefield. The object is to capture all 80 squares with your forces. Each player starts with the same number of forces but casualties are usually high.
- 2+: GALAXIA, an intelligent species of plant life, the Crinoids, try to invade your galaxy. Your mission is to destroy as many of them as you can so they don't destroy all animal life. Three skill levels are available and paddles are needed.
- 3+: GRAVITY FLOAT TRACE, the object is to follow and trace the coloured line without hitting the black barriers and get to the white line at the right. Paddles are needed and various skill levels are available.
- 4+: HEXADECIMAL PUZZLE is a game where you must move each of the hexadecimal numbers so that they are in ascending order. A type of magic square puzzle.
- 5+: HEXAPAWN is played on a 3*3 grid with 3 markers for each player. Possible moves are those of a pawn in a chess game. It's human versus Apple in this one.
- 6+: KIDNAPPED in which you're the victim and you awake in a strange place on the ninth floor. You must try to escape floor by floor.
- 7+: SHARK, the shark (player) tries to eat all the fish in a certain time period. Four levels of play.
- 8+: TRIVIA is a program of various designs and drawings that have a 3-D hint.
- 9+: VOLLEYBALL is a simulated game of volleyball; each player has two team members on his side of the net. Score is at the bottom of the screen, and paddles are needed.
- 10+: WORD CHALLENGE is a game for two players. The object is to guess the five letter word before your opponent does. Each word has a par and a time limit is set on how long it takes you to choose a letter. Paddles are needed.
- 11+: ARENA OF OCTOS - you fight different warriors in the infamous octagonal arena. Paddles are needed.
- 12+: LEYTE you're in command of eight US warships and destroyers against the Japanese. You control the course and decide when to fire guns and torpedoes. Paddles are needed.
- 13+: QUEST is where you create a character of use one from past games. You must travel through dungeons and try to accumulate gold pieces and experience. Watch out for monsters.
- 14+: KALAN for two players (one may be the computer) gives each player control of six pits with a certain number of sticks in them. The object is to finish with more sticks than your opponent.
- 15+: SNAKE SNACK you are a snake and must eat the bug that appears on the screen in the allotted time. Level of play increases as each bug is eaten and obstacles are placed in your way.

SIDE TWO (-) NOTES:

1-: BEACH PARTY POACHER WARS FIREGROUND

More arcade type games created with the Arcade Machine. They require a joystick or paddle to play.

AUG DISK #50 (AGM86)

SIDE ONE (+) NOTES:

- 1+: DISKCAT is a utility for ProDOS directories and files. Included are:
 1. Display Nested Catalog - provides a listing of all files on a disk, including those in subdirectories.
 2. Search for a String - which can locate any character string in any disk directory. Wildcard characters are supported.
 3. Lock
 4. Unlock
 5. Rename
 6. Delete
 These perform their ProDOS functions by a menu selection method.
- 2+: TYPE.CMD is a new ProDOS command which allows the contents of a file to be read. Control-S starts and stops scrolling of the screen.
- 3+: MENU.40 is a utility allowing one key program selection in 40 column mode only.
- 4+: MENU80 is an 80 column version of the above. Uses the arrow keys of the //e and //c.
- 5+: FREEWARE is a subdirectory containing the following programs:
 1. Freewriter is an excellent public domain word processor. It works best on a //e or //c. On-line help is available.
 2. ThreeDim draws a pyramid in 3-D using dimensions supplied from the keyboard.
 3. Survey plots a hi-res shape of your co-ordinates.
 4. Sketch is another hi-res etch-a-sketch program.
 5. Printer will print a text file to the screen or printer. It has its own page setup capabilities.
 6. Calculator turns your Apple into a Reverse Polish Notation (HP type) calculator.
- 6+: CLEAN.LISTER prints neatly formatted listings of Applesoft programs.
- 7+: APPLESOFT.TOKEN lists the vocabulary of BASIC and shows the memory locations of various machine language programs.
- 8+: MINI.ASEMBLER is a one-pass assembler that hides on the DOS 3.3 System Master. It is documented in Apple][and //e manuals.
- 9+: MARATHON lets you see the MouseText characters. Needs a //c or an enhanced //e.
- 10+: FILE.CABINET is a useful data handling program. To use it fully, move it to another disk to allow room for data files. Helpful instructions are included.
- 11+: LF.STRIP removes additional line feeds sometimes found in ASCII files downloaded from other computers.
- 12+: MX80.TEST makes sure your Epson is working.
- 13+: PROMENU is a 40 column menu generating program.

SIDE TWO (-) NOTES:

- 1-: POSTER.PRINTER allows printing of banners in your choice of styles.
- 2-: VISI.DATA is a simple menu-driven spreadsheet. Variable column widths, sorting and searching functions are supported. Maximum size is 70 rows by 10 columns.
- 3-: DINO.MATH is a maths tutor for youngsters. It teaches addition, subtraction, counting and a mixture of all three.
- 4-: BONGO.BASH is a maze game where you are a gorilla attempting to eat the flashing coconuts. Watch out for the robot sentries. The game parameters can be changed by the user.
- 5-: CIDER.ZAP is a utility to read, write, examine and print disk sectors. It also can check for bad ones.
- 6-: SECTOR.MAPPER for DOS 3.3 disks provides a lo-res map of a disk's sectors and displays free and used information. Printing is available.
- 7-: DOING.WINDOWS is a demonstration of Portal and lists a program on the screen in a series of windows.
- 8-: PROCAT does not run under DOS 3.3. It allows catalog listings of the desired disk. Searching for a specific file and printer output are available.

AUG DISK #51

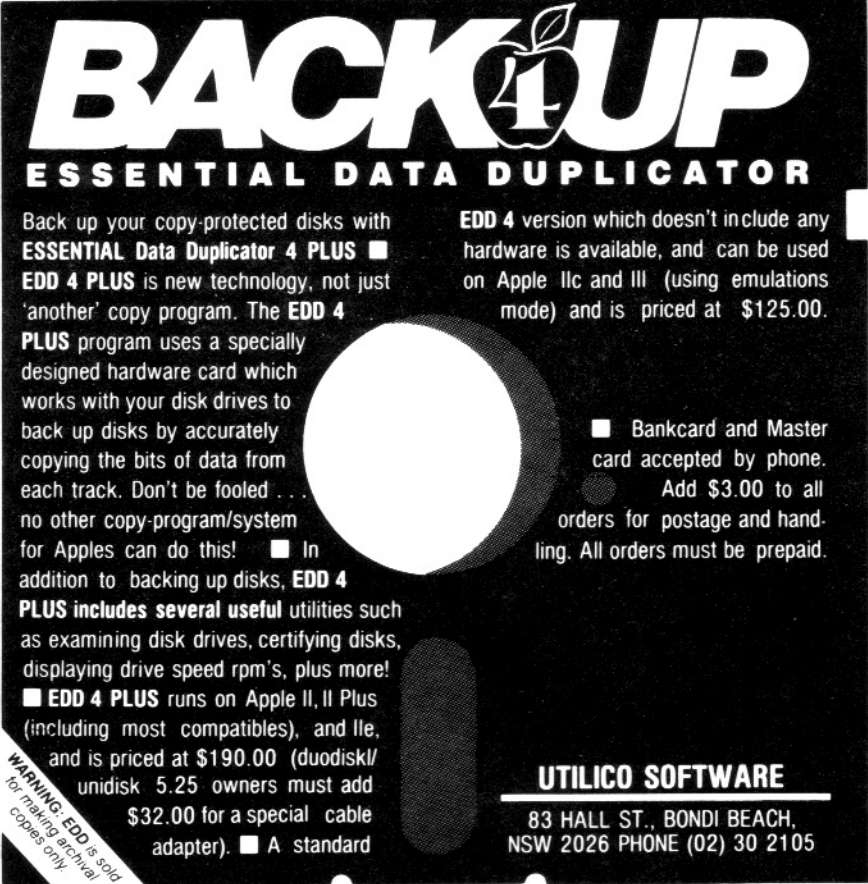
"ImageWorks":

This disk contains printer utilities for the Apple ImageWriter. It also turns your Apple // into a Mac. Side one contains the ProDOS version and Side two has the DOS 3.3 version.

AUG DISK #52

"WAP Printshop":

Both sides of this disk contains Printshop style graphic utilities from Washington Apple Pi. It is written in DOS 3.3 and allows creation of your own hi-res graphics - great fun for all ages.



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